State of California
Department of Transportation

The State's Position
to
The Disputes Review Board

regarding

Notice of Potential Claim No. 3

Amended Design Criteria for the East Tie-In Segment of the Temporary Bypass Structure

State Contract No. 04-0120R4

San Francisco – Oakland Bay Bridge
Temporary Bypass Structure Project

June 6, 2005

CONTENTS

Description of Dispute

The State has requested that the Contractor, CC Myers (CCM), provide amended design criteria that are specific to their proposed design.

Background Information

The Contract provides for the Contractor to design and construct the Temporary Bypass Structure (TBS) per the Plans and Specifications. [Appendix 3, Section 5-1.14] The Plans include design criteria to enable a design. [Appendix 2, Design Criteria]

Design criteria are an established set of standards for which the performance of a design can be evaluated against. The conformance of the Contractor's design to design criteria is a contractual requirement per Section 1 on sheet 96/193 of the Contract Plans and Article 5-1.14 of the Special Provisions. Ordinary structures that are owned and maintained by the Department of Transportation are typically designed per the Bridge Design Specifications (BDS), published by the Department. The BDS, along with other pertinent references, such as AASHTO, AWS and ASCE, to name a few, would qualify as design criteria, as they establish standards for certain aspects of the design and construction of structures, including material requirements. Often times if a structure is considered "non-ordinary", the established codes are supplemented by project specific criteria. This Contract contains project specific criteria for how the TBS should be designed. Section 1 under "Design Criteria" of the Plans [sheet 96/193] has the following provision:

> "The Temporary Bypass Structure shall be designed in accordance with 'Bridge Design Specifications (BDS)', LFD Version, April 2000, California Department of Transportation, (1996 AASHTO with interims, and revisions by Caltrans), modified or augmented as detailed in this design criteria document."

The East Tie-In (ETI) segment of the TBS is depicted on the plans as a "Move-Out/Move-In" scheme. [Appendix 2, East Tie-In Operation Sequence] This operation entails moving out the existing span YB-4 and moving into place the ETI segment to connect the TBS to the existing bridge. The Move-Out/Move-In operation should take place within a 24-hour time frame. Temporary supports are to be constructed to support all imposed loads during the operation.

CCM has submitted a design, however, which is entirely different from Move-Out/Move-In. Their submitted concept is a prescribed staging scheme in which an East Tie-In structural framing system would be constructed to receive an ultimate transfer of loads from the existing span YB4. CCM's staging concept entails jacking at strategic points along the bridge to facilitate in the transfer of loads. During each stage of load transfer, portions of the existing bridge would be removed based on the condition that they no longer carry significant loads.

Since the proposed design has significantly deviated from the Plans, the design criteria pertaining to it would additionally have to be amended by a Contract Change Order (CCO). In addition, the State cannot proceed with the acceptance of the Contractor's proposed East Tie-In concept without an executed CCO amending the design criteria. [Appendix 5, State Letter No. 137]

The State's Understanding of the Contractor's Position

CCM contends that the development of additional design criteria to support their proposed design is not a contract requirement; the development of new criteria would instead be an addition to the contract. CCM requested additional compensation for administrative and engineering costs incurred as a result of developing the East Tie-In supplemental design criteria. CCM's position is that delays to the design of the Temporary Bypass Structure have also occurred.

The State's Position

The Contract contains sufficient information to enable a design which follows a Move-Out/Move-In concept as described in the Plans [sheets 149/193 to 151/193]. This information includes design criteria, which are called out on sheets 96 /193 and 105/193 of the Plans. CCM, however, chose not to follow the Move-Out/Move-In concept. Instead, they are choosing to employ a more complex design concept that will utilize the existing YB4 span, however this concept goes outside the boundaries of the existing design criteria in the Contract. In order for the State to give due consideration to the proposed design, the State would have to allow for a deviation in the contract, for both the proposed design and its pertinent criteria. These issues were discussed during ongoing design meetings between CCM, Imbsen and Associates Inc. (IAI), and the State. [Appendix 6, Meeting Minutes]

The design criteria in the Plans were generated envisioning a Move-Out/Move-In design scheme. Since the proposed ETI design significantly deviates from Move-Out/Move-In, the State required CCM to develop amended criteria that is specific to the proposed design. These amended criteria would allow deviations needed to complete the ETI design review process. As an example, Sections 10 and 11 of the "Design Criteria" [Plans, sheet 105/193] describe various parameters for how the YB4 span will be moved out and how the ETI span will be moved into place. The Contractor's proposal attaches new work to the existing span, changing the load path design characteristics.

In another example, Section 4.2 of the "Design Criteria" states the following:

> "East Tie-In: The East Tie-In shall be a simply-supported double-deck span and shall be anchored to Pier E-1. The anchorage shall be designed with a safety factor not less than 3. The anchorage shall be designed to resist the total design seismic force of the East Tie-In span only."

CCM's design is not a simply-supported span, but rather a two-span continuously supported structure containing an intermediate bent. The load path of a simply-

supported structure is more predictable and much easier to follow than the load path for CCM's proposed structure.

A design conforming to the Contractor's amended criteria will result in an increased risk of disrupting traffic on the San Francisco – Oakland Bay Bridge (SFOBB). It also required extra effort on the State's behalf to complete the review. The State needed to understand that the criteria changes would ultimately result in a workable design. Therefore, it was reasonable for the State to request that the level of detail required for the final submittal be provided earlier in the design review process. The State has determined that the submission of amended criteria to support CCM's proposed ETI design is justifiable to facilitate in its review and required this as a condition prior to issuing a no cost CCO to implement the Contractor's requested change.

In NOPC 3, the Contractor states the following [Appendix 5, CCM Letter No. 44]:

> "Caltrans did not contractually require CC Myers to provide for a new design criteria for the alternative prior to accepting or as a condition for accepting the bid."

In response to CCM's argument, the State makes reference to the following sections of the Special Provisions. Section 2-1.07 states the following:

> "Attention is directed to 'Contractor Design' of these special provisions regarding proposal drawings, which shall be submitted with the bid. It is understood that **the proposal drawings at bid time are preliminary conceptual versions subject to change**, however, the drawings shall be as complete and comprehensive as possible to demonstrate a clear plan for construction. **Review of the proposal drawings will be to assess the responsibility of the Contractor, and does not relieve the Contractor from conforming to plans and specifications**."

Section 3-1.01A states the following:

> "Successful completion of the pre-award qualifications process does not relieve the Contractor of the responsibility for furnishing materials or producing finished work of the quality specified in project plans and specifications, including the project plans and specifications authorized by the Engineer."

The Contractor's design must comply with the Contract. The State will allow the Contractor to amend certain elements in the Design Criteria, however those changes are at the request of the Contractor and no additional compensation will be allowed.

In the Contractor's NOPC, reference was made to Bid Inquiry 232, and noted that the State would allow alternative designs to be considered for approval, as long as the design met contract criteria. This is only a portion of the response and changes the context of the complete response. Bid Inquiry 232 had the following question and response [Appendix 4]:

> "**Q**: For the East Tie-In, can we retrofit/modify the existing span between Bents E1 & YB4, in lieu of constructing a new span and perform the slide-in/slide-out, provided that the design criteria set-forth in the contract is met for the modified structure, and the portion of the existing structure outside the limits of the revised alignment is removed after traffic is switched over?"

"**A**: The specifications allow the option proposed by the Contractor. However, the State does not see how this can be accomplished in the time allowed for the bridge closure. The design for the TBS East Tie-In segment proposed by the Contractor **must meet a number of criteria, including but not limited to the TBS Design Criteria**, Contractor Area Use constraints shown on the C-sheets, and time allotted for bridge closures in the currently approved Traffic Management Plan (TMP). **Bidders are advised that delays caused by additional approvals and other changes are at the Contractor's risk.**"

The assumption is that the Contractor will meet the criteria. If the Contractor proposes a change then the additional approval of such changes are at the Contractor's risk and the Contractor should sufficiently account for them in the bid. This position was reiterated in State Letter No. 137 where it was stated that, "The State will only process a no cost change order, initiated by CC Myers, to allow for the deviation from the Contract Plan and Specification design criteria." [Appendix 5]

Conclusion

CCM has no merit to their potential claim because they should have had prior knowledge of the requirements of the Plans and Special Provisions before submitting their bid. The Plans and Special Provisions contain sufficient information to enable the Move-Out/Move-In concept. Instead of following the contract requirements, CCM chose to propose a more complex design that did not utilize the Move-Out/Move-In concept.

CCM had the opportunity to revise their design so that it can conform to the existing design criteria, or amend the criteria to show that the proposed design will manage the risk to the traveling public similar to the Move-Out/Move-In design. Rather than rejecting this proposed design, the State has agreed with the Contractor to concurrently review the amended design criteria with the proposed East Tie-In design. The State has agreed with the technical aspects of the amended criteria but does not believe that it is responsible for any of the resultant costs. In order for the State to consider review, amended criteria would be needed to support any differing design assumptions and boundary conditions. The State requested these amended criteria to facilitate in the analysis and review of the design.

As the contract had already provided the scope needed for the Contractor to design and construct the TBS, all incurred costs and delays to develop the additional criteria should be borne entirely by the Contractor. The State believes that the actual contract design criteria changes are relatively simple. Any additional analysis generated by this Contractor requested change is purely the result of the Contractor's choice of design. The State is entitled, however, to verify that the Contractor has performed due diligence to the design and cannot be expected to provide additional compensation.

It is for the above reasons that the State requests the Disputes Review Board to find no merit to CC Myers' Potential Claim No. 3.

Contract Plan Sheet References

Reference Sheet	Title of Special Provisions Section
96 to 105 / 193	Design Criteria
149 to 151 / 193	East Tie-In, Operation Sequence

04	SF	80	12.6/13.2	96	193

Caltrans Metric

2-18-03
REGISTERED CIVIL ENGINEER

3-31-03
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — JUAN A. MURILLO — No. C051722 — Exp. 6-30-05 — CIVIL — STATE OF CALIFORNIA

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DESIGN CRITERIA

1. GENERAL

The Temporary Bypass Structure shall be designed in accordance with "Bridge Design Specifications" (BDS), LFD Version, April 2000, California Department of Transportation, (1996 AASHTO with interims, and revisions by Caltrans), modified or augmented as de-tailed in this design criteria document.

DL	DEAD LOAD
SDL	SUPERIMPOSED DEAD LOAD
LL	LIVE LOAD
EQ	EARTHQUAKE
I	IMPACT
HSS	HOLLOW STRUCTURAL SECTIONS
TBS	TEMPORARY BYPASS STRUCTURE
DEE	DESIGN EVALUATION EARTHQUAKE
DLS	DISPLACEMENT LIMIT STATE
YBI	YERBA BUENA ISLAND
KL/r	SLENDERNESS RATIO
N	NORTH
S	SOUTH
SSI	SOIL STRUCTURE INTERACTION
e	DISPLACEMENT DUE TO EARTHQUAKE
RDWY	ROADWAY
PT	POST-TENSIONING
USCG	US COAST GUARD
AASHTO	American Association of State Highway Officials
ANSI	American National Standards Institute
ASCE	American Society of Civil Engineers
AWS	American Welding Society
SEI	Structural Engineering Institute
ANSI/ASCE 7-95	Minimum Design Loads for Buildings and Other Structures
SEI/ASCE 37-02	American Society of Civil Engineers Design loads on Structures During Construction
ANSI/AASHTO/AWS/ D1.1	American Welding Society - Structural Welding Code - D1.1
ANSI/AASHTO/AWS/ D1.5	American Welding Society - Bridge Welding Code - D1.5
ANSI/AASHTO/AWS/ D1.4	American Welding Society - Structural Welding Code Reinforcement Steel - D1.4

1.1 Definition of Terms:

Temporary Bypass Structure (TBS)
The Temporary Bypass Structure (TBS) is the West Tie-In, Viaduct and East Tie-In segments.

Temporary Structures
Temporary Structures are those used to build the TBS, or remove portions of existing bridge structure to facilitate TBS construction. Temporary Structures are classified as Ordinary and Important.

Ordinary Construction
Falsework
Shoring
Bridge Removal Location A - Falsework and Bracing

Important Construction (for operations of High Consequence)
Temporary Supports for the Move-In Operation (Includes Skidway and Lifting Structures, etc.)

Temporary Supports for the Move-Out Operation (Includes Skidway and Lifting Structures, etc.)

7 Temporary Shoring - Excavation bracing adjacent to the foundations for the Existing YBI Viaduct, West Tie-in Support Structure Locations A-D, Viaduct and East Tie-in. Shoring shall be either Braced or restrained with Tie-Back's.

9 ~~Temporary~~ Support Structure Locations A, B, C, and D for the Existing YBI Viaduct Bridge Removal Location B - Falsework and Bracing

2. DESIGN LOADS
This section covers all design loads except for seismic demands discussed in Section 4.

2.1 Structural Dead Loads - DL
Unless specified herein or in BDS, all dead loads shall be as specified in the Specifications cited in Article 1, General.

2.1.1 Concrete
The in-service air dry unit mass of normal weight concrete, including reinforcement shall be 24.3 kN/m³ (155 lb/ft³). The in-service air dry unit mass of sand lightweight concrete including reinforcement shall be 18.8 kN/m³ (120 lb/ft³).

2.1.2 Steel
The unit mass of structural steel, including fabricated plate steel, rolled shapes, and wire, shall be 76.9 kN/m³ (490 lb/ft³).

2.2 Other Permanent Loads - SDL

2.2.1 Vehicular Barriers
Temporary Railings Type "K" = 5.7 kN/m (390/lb/ft)
Type 732 = 8.5 kN/m (585/lb/ft)

2.2.2 Wearing Surface
West Tie-In on Support Structure Location B has no additional wearing surface. ~~30mm Rubberized Open graded Asphalt concrete~~ wearing surface on Viaduct and East Tie-in shall not exceed 23.5 kN/m³ (150 pcf).
~~Unit weight RAC (rubberized asphalt concrete)=18.8 kN/m³ (120 pcf)~~
~~Unit weight open graded AC (asphalt concrete)=22 kN/m³ (140pcf)~~
Unit weight AC (asphalt concrete) (Type A)=23.5 kN/m³ (150 pcf) for existing YBI Viaduct.

10 9 5 3

2.2.3 Provision for Utilities
7.2kN/m (500lb/ft)

This value includes allowance for miscellaneous metal, drainage, lighting system, utilities, utility supports, service platform utilities, and service platform support.

2.2.4 Stay-in-Place Formwork

When stay-in-place forms are used in construction, the design shall consider the increased deck dead load and the superimposed dead load of the stay-in-place form.

2.3 Live Loads - LL+I
See Caltrans BDS

2.3.1 Standard Truck Alternate Military Vehicle and Lane Loads
See Caltrans BDS

2.3.2 Load Reduction Factors for Multiple Lane Loading
See Caltrans BDS

2.3.3 Permit Vehicle Loads
See Caltrans BDS

2.3.4 Maintenance Vehicle
Not Applicable

2.3.5 Live Load Contribution Under Seismic Conditions
See Caltrans BDS

2.4 Thermal Effects - T

2.4.1 Uniform Temperature - Tc and Ts
Design temperature range shall correspond to BDS requirements for coastal areas:

Mean Temperature	27°C (81°F)
Rise or Fall:	
Concrete	17°C (30°F)
Steel	22°C (40°F)

2.4.2 Coefficient of Thermal Expansion
Normal weight Concrete: 10.8×10^{-6}/°C (6.0×10^{-6}/°F)
Sand light-weight Concrete: 9.0×10^{-6}/°C (5.0×10^{-6}/°F)
Steel: 11.7×10^{-6}/°C (6.5×10^{-6}/°F)

2.5 Wind - W
On Finished TBS: in accordance with Caltrans BDS
On Structures during construction: in accordance with SEI/ASCE 37-02 with companion ANSI/ASCE 7-95.

2.6 Combination of Loads

2.6.1 Temporary Bypass Structure & Temporary Supports carrying traffic
See CALTRANS BDS.

2.6.2 Temporary Structures
For Load ~~Factor~~ Design: See SEI / ASCE 37-02 Sections 2.1 and 2.2.
For Allowable Stress Design: See SEI / ASCE 37-02 Sections 2.1 and 2.3.

9 **REVISED PER ADDENDUM NO. 9 DATED SEPTEMBER 4, 2003**

10 **REVISED PER ADDENDUM NO. 10 DATED SEPTEMBER 22, 2003**

7 **REVISED PER ADDENDUM NO. 7 DATED AUGUST 4, 2003**

5 **REVISED PER ADDENDUM NO. 5 DATED JUNE 27, 2003**

3 **REVISED PER ADDENDUM NO. 3 DATED JUNE 6, 2003**

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SAN FRANCISCO OAKLAND BAY BRIDGE
EAST SPAN SEISMIC SAFETY PROJECT

TEMPORARY BYPASS STRUCTURES

DESIGN CRITERIA NO. 1

DESIGN OVERSIGHT
SIGN OFF DATE

	BY	CHECKED
DESIGN	J. Murillo	C. Subrizi
DETAILS	C. Subrizi	R. Mutobe
QUANTITIES	N/A	N/A

PREPARED FOR THE STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Juan A. Murillo
PROJECT ENGINEER

CU 04251
EA 0120R1

BRIDGE NO. 34-0006(TEMP)
KILOMETER POST 12.6

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 1/21/03 | 5/30/03 | 6/18/03

SHEET OF

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Caltrans Metric

2-18-03
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3-31-03
PLANS APPROVAL DATE

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3. MATERIALS

3.1 Concrete for Temporary Bypass Structures

3.1.1 Concrete - Cast In Place Superstructure & Substructure
Reinforced Concrete
f'c min.= See Caltrans BDS.
fy= 420 MPa (reinforcement)

3.1.2 Prestressed Concrete

3.1.2.1 Prestressing Steel
Concrete: f'c min.= See Caltrans BDS.
Strand: 1860 MPa Low-Relaxation
Bar: ASTM A722

3.1.3 Prestress Losses
For conventional CIP Concrete on Falsework:
Standard galvanized steel ducts:
Wobble coefficient k=0.0007(/m) (0.0002/ft)
Friction coefficient u =0.20(/rad)

3.1.4 Reinforcement Protection
No epoxy-coated reinforcement shall be used for the Temporary Bypass Structure.

3.2 Timber
Timber design shall comply with AASHTO (1996).

3.3 Structural Steel for Temporary Bypass Structures

3.3.1 General Materials
Unless modified herein, or specified in the BDS, structural steel shall comply with the AASHTO Materials Specifications and ASTM.

3.3.1 Structural steel
Plates: ~~ASTM 709M Grade 345 (50 Ksi)~~ See Caltrans BDS.
Rolled Shapes: ~~ASTM A709M Grade 345 (50 Ksi)~~ See Caltrans BDS.
HSS: ASTM A500
Structural Pipe: ASTM A106 Grade C (Fy=275 MPa)
API 5L Grade B - X52 (Fy=240-360 MPa)

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3.3.2 Fasteners
ASTM A325, high strength bolts unless noted otherwise.

3.3.3 Anchor Bolts
ASTM 354 Grade BD

3.3.4 Welding
Welding of superstructure (Non-tubular) members shall comply with ANSI/AASHTO/AWS D1.5. Welding of substructure members (Tubular and Non-Tubular) shall comply with ANSI/AWS D1.1. Reinforcement with ANSI/AWS D1.4

3.3.5 Fatigue
Components shall be checked per BDS to withstand fatigue induced by 500,000 cycles of loading.

3.3.6 Cleaning and Painting
Exposed new metal surfaces and areas of connections to existing steel shall be dry blast cleaned and dry spot blast cleaned, respectively, in conformance with the requirements in Surface Preparation Specification No. 10, "Near White Blast Cleaning," of the "SSPC: The Society for Protective Coatings." Blast cleaned surfaces shall receive a single undercoat ~~consisting~~ which shall consist of a waterborne inorganic zinc coating conforming to the requirements in AASHTO Designation M 300, Type I or Type II, ~~. Existing steel may be coated with lead paint~~ except that:

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1) the first 3 sentences of Section 5.6, "Primer Field Performance Requirements", shall not apply for Type II coatings and the entire Section 5.6.1 shall not apply for either type of inorganic zinc coating.

3.4 Allowable Materials for the Temporary Bypass Structures
Figures 3.4.1 & 3.4.2 illustrate allowable materials for the Bypass Structures.Material designations from figures are listed in Table 3.4.

3.5 Acoustic Damping of Stay-In-Place Formwork
Exposed metal deck used for the upper deck of the viaduct segment shall have a noise-reducing coating as designated in the special provisions.

Table 3.4: Allowable Materials for Temporary Bypass Structures

West Tie-In

5
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A - Superstructure = Steel, Concrete, Prestress steel hardware
B - Substructure = Steel, Concrete, Tie-down cables
C - Foundation
Footing = Concrete, Piles = Steel or concrete, Tie down anchors ~~= Composite~~
D - Bracing and Cradle Support = Steel, Concrete
E1 - Temporary Center Girder Vertical Support = Timber, Steel
E2 - Center Girder ~~Vertical and~~ Lateral Support = Steel, Concrete
F - South Edge Vertical and Lateral Support = Steel, Concrete
G1 - Temporary Support Footings (for E1 supports) = Timber, Concrete
G2 - Support Footings = Concrete

NOTE: Timber is allowed for blocking and wedging where required, (i.e., between floor beams.)

Viaduct

A - Superstructure Girder or Truss = Steel, Concrete,
B - Substructure = Steel, Concrete, (for bearings see 4.7.1)
C - Foundation
Footing = Concrete, Piles = Steel, Tie down anchors

East Tie-In

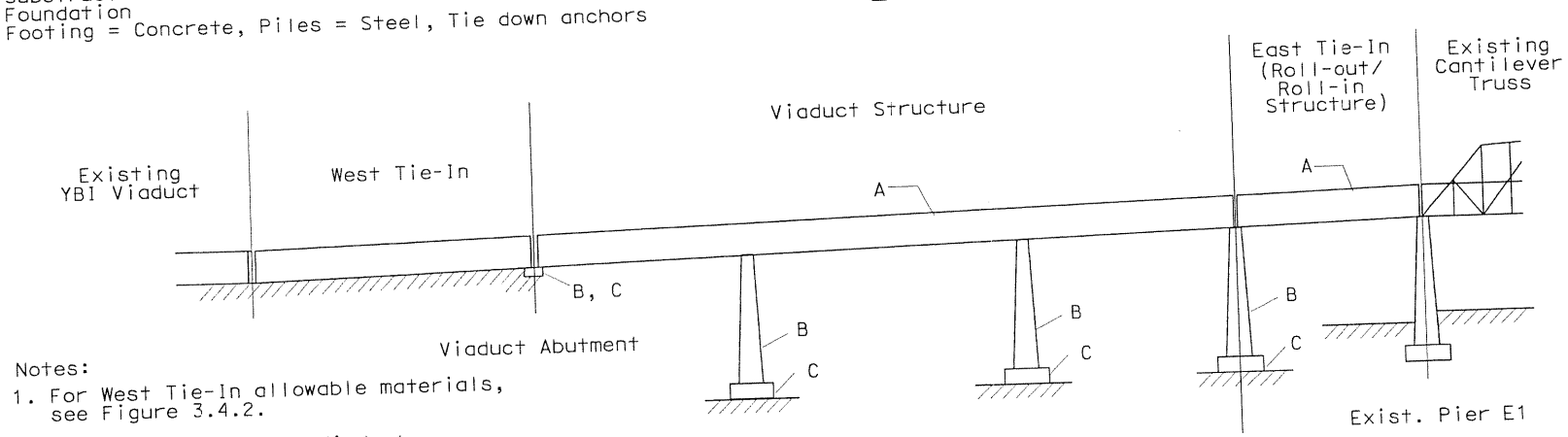
5

A - Superstructure Girder or Truss = Steel, Concrete, ~~Composite~~
B - Substructure = Steel, Concrete, (for bearings see 4.7.1)
C - Foundation
Footing = Concrete, Piles = Steel, Tie down anchors

3

10 REVISED PER ADDENDUM NO. 10 DATED SEPTEMBER 22, 2003

12 REVISED PER ADDENDUM NO. 12 DATED OCTOBER 20, 2003

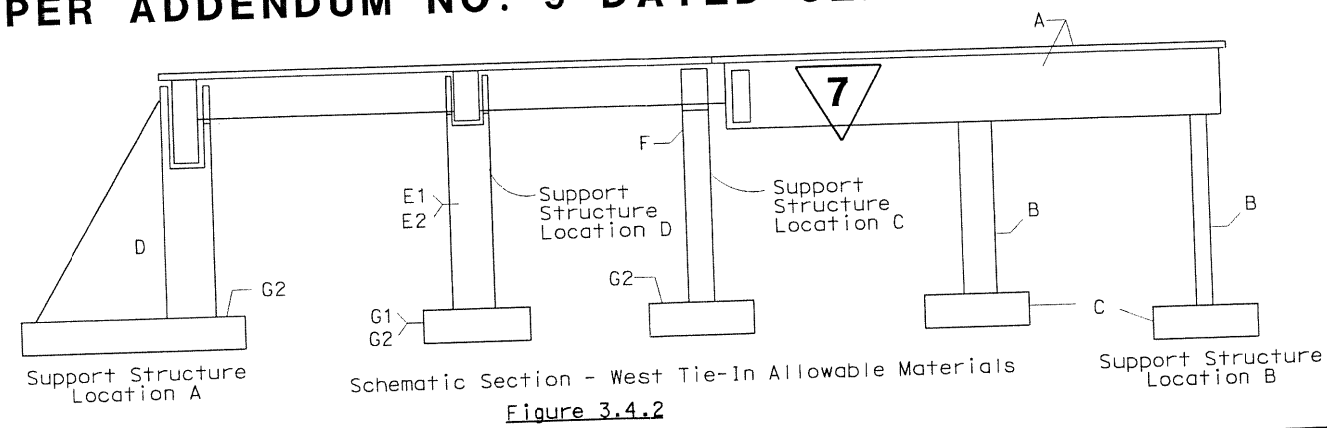


Notes:
1. For West Tie-In allowable materials, see Figure 3.4.2.
2. Two towers shown for Viaduct Substructure (illustrative purposes only)
3. E1/E2 and G1/G2 are installed in stages. See "Design Criteria No. 7" sheet.

Schematic Elevation of Temporary Bypass Structure - Allowable Materials

Figure 3.4.1

9 REVISED PER ADDENDUM NO. 9 DATED SEPTEMBER 4, 2003



Schematic Section - West Tie-In Allowable Materials

Figure 3.4.2

7 REVISED PER ADDENDUM NO. 7 DATED AUGUST 4, 2003

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EAST SPAN SEISMIC SAFETY PROJECT

TEMPORARY BYPASS STRUCTURES

DESIGN CRITERIA NO. 2

DESIGN OVERSIGHT
SIGN OFF DATE

DESIGN	BY J. Murillo	CHECKED C. Subrizi
DETAILS	BY C. Subrizi	CHECKED R. Mutobe
QUANTITIES	BY N/A	CHECKED N/A

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REVISION DATES (PRELIMINARY STAGE ONLY): 3/21/03 5/30/03

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3

4. SEISMIC DESIGN

11

Seismic design shall be performed in accordance with BDS, modified by or augmented with ~~pertinent~~ provisions of Caltrans Seismic Design Criteria Version 1.2 (SDC) December 2001, the Caltrans Guide Specifications for Seismic Design of Steel Bridges (GSSDSB) December 2001, the AASHTO Guide Specification for Seismic Isolation Design, 2000, and project specific criteria as detailed in this document.

The structures shall be designed for the DEE and shall be evaluated for DLS.

4.1 Seismic Demand for Temporary Bypass Structures

4.1.1 Design Seismic Loading

Note: Live load shall not be considered with seismic load (Use DL + SDL)

4.1.2 Design Evaluation Earthquake

The design member forces and displacements (elastic response) shall be based on the results of a linear dynamic response spectrum analysis for the 3-dimensional Design Evaluation Earthquake (DEE) acceleration response spectra (5% damped) for horizontal and vertical loading shown in Fig. 4.1.2A. The vertical acceleration spectral amplitudes are 2/3 the horizontal values. The spectral accelerations are tabulated in Table 4.1.2A. Spectral displacement are shown in Fig.4.1.2B & tabulated in Table 4.1.2B.

4.1.3 Minimum Lateral Strength

Each column or pier shall have a minimum lateral flexural capacity (based on expected material properties) to resist a lateral force of 0.1Pdl. Where Pdl is the tributary dead load applied at the center of gravity of the superstructure and substructure elements.

4.1.4 Displacement Capacity for Displacement Limit State

In addition to member force design, structures shall be designed to respond in a stable manner (no reduction in strength capacity) under total global system displacement demands corresponding to 3 times the elastic displacements. This is referred to as Displacement Limit State (DLS).

4.1.5 Modification of the 5% Damped Design Spectra for Approved Load-Limiting Devices

If design is based on a system with effective damping that is demonstrably different, the 5% damped response spectra may be modified for the different effective damping by factoring the spectral amplitudes as indicated below.

Effective Damping (% critical)	5	10	20
Modification Factor	1.0	0.83	0.67

The assumed damping shall be no greater than 20%. Analysis procedures shall be in accordance with the AASHTO Guide Specification for Seismic Isolation Design

4.2 Segments and Articulation

The Temporary Bypass Structure shall consist of three distinct structure types:

i) The West Tie-In
ii) The Viaduct
iii) The East Tie-In

The distinct structures shall be separated by expansion joints located at the beginning of Viaduct (Sta. 51+23 top deck, Sta. 51+33 bottom deck) and at the common Viaduct/East Tie-In support (Sta. 54+61). The specified overall articulation is illustrated in Figure 4.2.

West Tie-In:
Vertical and lateral articulation of the West Tie-In construction and support of the Existing YBI Viaduct shall be considered at all stages of construction of the West Tie-In as shown in plan in Figures 4.2 (a) through (h), and in section in Figures 4.2 (i) and (j).

The West Tie-In contains 3 distinct frames with 3 distinct structural systems. Frame 1 is defined between existing Bents 39 and 42; Frame 2 is defined approximately between existing Bents 43 and 46; Frame 3 is defined between existing Bents 46 and 48. ~~Expansion joints between the West Tie-In frames shall be maintained.~~

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Frame 1 of the West Tie-In structure is a series of short cantilevered frames. The cantilevers support the existing edge girder. Lateral restraint for the existing YBI Frame 1 is supplemented by the support structure for Frame 1 of the West Tie-In ~~via a closure pour between~~

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~~the edge girder and the West Tie-In deck slab. This connection will provide a continuous deck slab between the existing and new deck.~~

Frame 2 of the West Tie-In structure is a grillage supported on 3 sides with its free edge supporting the existing edge girder. The cantilever spans from the support to the free edge and provides support in line with the existing floor beams. The "simple" span is supported on Frame 1 to Frame 3 of the West Tie-In.

Frame 3 of the West Tie-In structure is a series of portal frames and is physically disconnected from the existing YBI Viaduct structure.

Viaduct Structure:
The bypass viaduct structure shall consist of a continuous (i.e., no intermediate expansion joints)double-deck superstructure supported on substructure consisting of towers or piers and the abutment (at West Tie-In). The supporting substructure, if a flexible structure (fundamental period of system with tributary mass is ~0.7 seconds or more), shall be designed as a "ductile" system wherein reserve capacity is demonstrated, so that the DLS criteria is satisfied. If the substructure is designed to provide a stiff structural system (fundamental period of system with tributary mass is less than ~0.7 seconds), load-limiting devices (bearings) positioned at top of the substructure (under superstructure) may be designed to accommodate the DLS criteria and thus protect the substructure from unacceptable damage.

Irregularities in geometry, mass distribution and structural stiffness shall be avoided wherever possible. Balanced stiffness and mass distribution shall be a design objective.

East Tie-In:
The East Tie-In shall be a simply-supported double-deck span and shall be anchored to Pier E-1. The anchorage shall be designed with a safety factor not less than 3. The anchorage shall be designed to resist the total design seismic force of the East Tie-In span only.

4.2.1 Balanced Stiffness

For the Viaduct Structure, the ratio of effective stiffness between any two bents within a frame (including abutment/bearing) or between any two columns within a bent shall satisfy equation 4.1, and the ratio of effective stiffness between adjacent bents within a frame or between adjacent columns within a bent shall satisfy equation 4.2.

An increase in superstructure mass along the length of the frame shall be accompanied by a reasonable increase in column stiffness. For variable width frames the tributary mass supported by each bent, pier or column shall be included in the stiffness comparisons as specified by equation 4.1(b) and 4.2(b).

Constant Width Frames			Variable Width		
K^e_i / K^e_j	≥ 0.5	(4.1a)	$\frac{K^e_i}{Mi} / \frac{K^e_j}{Mj}$	≥ 0.5	(4.1b)
K^e_i / K^e_j	≥ 0.75	(4.2a)	$\frac{K^e_j}{Mi} / \frac{K^e_j}{Mj}$	≥ 0.75	(4.2b)
K^e_i = The smaller effective bent or column stiffness			Mi = Tributary mass of column or bent i		
K^e_j = The larger effective bent or column stiffness			Mj = Tributary mass of column or bent j		

The following considerations shall be taken into account when calculating effective stiffness: framing effects, end conditions, column height, percentage of longitudinal and transverse column steel, column diameter, and foundation flexibility.

4.2.2 Balanced Geometry - Viaduct Segment

The ratio of fundamental periods of vibration for the tower, bents and piers adjacent to the viaduct, in the longitudinal and transverse direction shall satisfy equation 4.3.

$$Ti / Tj \geq 0.7 \qquad (4.3)$$

Ti = Natural period of the less flexible frame
Tj = Natural period of the more flexible frame

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SIGN OFF DATE

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DETAILS	BY C. Subrizi	CHECKED R. Mutobe	
QUANTITIES	BY N/A	CHECKED N/A	

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SAN FRANCISCO OAKLAND BAY BRIDGE
EAST SPAN SEISMIC SAFETY PROJECT

TEMPORARY BYPASS STRUCTURES

DESIGN CRITERIA NO. 3

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4.2.3 Adjusting Dynamic Characteristics - West Tie-In

Evaluation of the local ductility demands and capacities is required if project constraints make it impractical to satisfy the stiffness and structure period requirements in equations 4.1, 4.2, and 4.3.

4.2.4 Dynamic Characteristics - East Tie-In

The articulation of the East Tie-In is defined in Fig.4.2.

4.3 Performance Criteria

4.3.1 Bypass Structures
The required performance is defined as "essentially" elastic response of structure components under the Design Evaluation Earthquake. In addition, the minimum specified "ductility" capacity for the DLS shall be provided.

4.3.2 Design Evaluation Earthquake (DEE)
After the design evaluation earthquake the bridge shall suffer "no loss of operation". The bridge shall remain essentially elastic.

4.3.3 Displacement Limit State (DLS)
The Structure shall maintain stability and vertical load-carrying capacity at the deformations associated with the DLS.

4.3.4 Ductile Structures or Structures with Protective Systems
The stability of the structure shall be demonstrated by means of pushover analysis. The structures shall have a clearly defined inelastic mechanism for response to lateral loads.The inelastic response shall be restricted to substructure components (elements of columns, piers, or towers) or connections at top of substructures to superstructure (e.g. load limiting bearings), or the substructure to ~~and~~ foundation.

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4.3.5 Double-Deck Superstructure
Under both the DEE and the DLS, inter-deck lateral strength, stiffness and displacement shall be controlled so that transverse inter-deck response is elastic. The maximum drift ratio shall be 0.65%.

4.3.6 Foundation Components
The lateral, vertical and rotational capacity of the foundations shall exceed the respective demands. The size and number of foundation components and their layout shall be designed to resist the following demands:

The service level moments, shears and axial demands imparted by the substructure (i.e. column, tower, pier) component(s) considering the nominal material properties and strength reduction factors in BDS and design load (service) geotechnical capacities.

The overstrength moment capacity and associated shear, in combination with axial demand, of the adjoining substructure (i.e. column, tower leg, pier) component(s). The demands shall be associated with the Displacement Limit State (DLS) and shall be based on the substructure components' expected nominal material properties (as defined in section 4.8). The resistance shall rely on nominal material properties and geotechnical resistance (ultimate) of the foundation components.

For a capacity-protected substructure, (e.g. as illustrated in Figure 4.7.1 (b) the foundation shall be designed for the load-limiting overstrength capacity where the overstrength factor is per the manufacturer's specification, with a minimum of 1.2.

4.3.7 Collapse Avoidance
For seismic loading during construction, the performance objective shall be to avoid collapse. See Sections 4.12 and sections 8,9,10 & 11 for performance objectives involved with High Consequence Operations (e.g. Lifting, Skidding)

4.4 Seismic Analysis

4.4.1 General
The design of the Bypass structures shall be performed using 3D linear elastic response spectrum analysis. Response spectrum analysis shall be used to establish target displacements for non-linear static (i.e. pushover) analysis.

At a minimum, the analysis techniques implemented should be appropriate and boundary condition assumptions, mass distribution, and member representation shall be clearly documented.

4.4.2 Displacement Capacity Evaluation
Lateral displacement capacity of structures shall be evaluated using non-liner static (i.e. pushover) analysis. All displacement capacity evaluations shall use models that reflect the "best estimate" of the likely structure and foundation condition at the time of the design evaluation earthquake.

When pushover analysis is used to calculate the deformation capacity of the structures, the deformation capacity, corresponding to the limiting strains in materials, shall exceed the calculated deformation demand. Pushover analysis shall be conducted along at least two principal axes.

The deformation and/or displacement capacity of structures shall be evaluated using the limiting material strains and conditions contained in Section 4.10.

For structures with protective systems, the contractor shall demonstrate the devices providing the protection can perform their function up to the required displacement (DLS).

4.4.3 Soil-Structure Interaction Effects
Soil-structure interaction effects shall be incorporated into the design analyses of the bridge system. Foundation dynamic characteristics shall be incorporated into the analysis with discrete elements representing piles and footings with appropriate representation of the effects of soil structure interaction (SSI), or simplified equivalent group dynamic characteristics including stiffness, mass and damping.

4.4.4 Combination of Effects
For response spectrum analysis, seismic effects from excitation of three orthogonal directions shall be combined by the 30% rule, where the forces resulting from excitation in one direction are combined with 30% of the forces resulting from excitation in the orthogonal directions.

4.5 P-Δ Effects
P-Δ effects in supports, piers and towers shall be considered.

4.6 Capacity Design
Structural elements, other than members constituting the "ductile" horizontal load resisting part of the structure, or load-limiting devices, shall be designed to resist the over-strength capacity of the "ductile" elements.

4.7.1 Structural Fuses

Approved Load-Limiting devices are elastomeric bearings, lead-rubber bearings and PTFE bearings.
a) West Tie-In
Structural fuses or devices may be employed to achieve the specified "ductile" displacement response. Schematic sections (shown in Fig. 4.7.1(a) of the West Tie-In, show potential fuses that are acceptable. These include:
- Plastic hinges at the bases of concrete piers or bents via ductile seismic detailing
- Steel frames configured and proportioned for ductility
- Load-limiting devices between piers (towers) and the superstructure

b) Viaduct and East Tie-In
Viaduct and East Tie-In structural fuses are shown in Fig. 4.7.1(b)
These include:
i) Plastic hinges at the bases of concrete piers or bents via ductile seismic detailing
ii) Steel frames configured and proportioned for inelastic response
~~iii) Yielding of anchors (e.g. yielding of ductile steel anchor bolts securing tower legs) to allow guided rocking~~
iii) Load-limiting devices when very stiff piers are used

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In all cases with the use of fuses, capacity design (with over-strength) shall be employed so that the fuse is mobilized prior to failure modes (brittle) that have not been provided for; i.e., in order to prevent inelastic response of capacity-protected structural components.

4.7.2 Design of Devices
Seismic isolation devices shall be designed according to the AASHTO "Guide Specification for Seismic Isolation Design", 2000.

4.8 Material Properties for Ductile Elements

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TEMPORARY BYPASS STRUCTURES
DESIGN CRITERIA NO. 4

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4.8.1 Design Flexural Strength-Reinforced Concrete Sections
The design flexural strength of plastic hinges for normal weight concrete shall be based on expected material strengths:
f'ce = 1.3f'c or 34.5 MPa (5000 psi), whichever is greater
fye = 1.1fy

Maximum concrete strains at the design flexural strength shall not exceed 0.005. If moment curvature analysis is used to determine the design flexural strength, the steel strains shall be limited to values given in SDC.

4.8.2 Maximum Plastic Moment (Overstrength)-Reinforced Concrete Sections
The maximum plastic (or overstrength) moment shall be determined using moment-curvature analysis as per SDC.

4.8.3 Design Flexural Strength-Structural Steel Sections
Expected yield strength Fye of steel is defined as:

$$Fye = RyFy$$

where
Fye = expected yield strength of steel (MPa)
Ry = overstrengh factor for steel
Fy = specified minimum yield strength of steel (MPa)

Table 4.8.3

Application	Ry
Plate and all other products	1.1
Hot-rolled structural shapes and bars	
ASTM A36	1.5
A572 Grade 42	1.3
All other grades	1.1
Hollow Structural Section	
ASTM A500, A501, A618 and A84	1.3
Steel Pipe - ASTM A53	1.4

4.8.4 Maximum Plastic Moment (Overstrength)-Structural Steel Sections

The maximum plastic (or overstrength) moment shall be determined using moment-curvature analysis as per Caltrans GSSDSB Sect. 3.1.2 and Sect. 5.1.1.

4.9 Deformation Capacity

4.9.1 Deformation Capacity-Reinforced Concrete Members
When demonstrating ductility capability, the deformation capacity of concrete structures shall be calculated using plastic hinge lengths calculated according to SDC Sect 7.6 and rotational capacities corresponding to the allowable material strains from Section 4.10.

4.9.2 Deformation Capacity-Structural Steel Members

When demonstrating ductility capability, the deformation capacity of steel structures shall be calculated using plastic hinge lengths, Lp calculated as specified and rotational capacities corresponding to the allowable material strains from Section 4.10.

$$Lp = \text{maximum of} \begin{cases} \frac{L}{8} & \text{For ductile steel components} \\ 450 \text{ mm} \end{cases}$$

4.10 Allowable Material Strains

4.10.1 Normal Weight Concrete
Allowable strains in normal weight concrete shall be:
Piers (Average extreme fiber strains in plastic hinge):
Design Evaluation Earthquake $\varepsilon_{cDEE}=0.005$
Beyond DEE (DLS), ε_{cu} is in accordance with SDC.

4.10.2 Reinforcing Steel
Allowable strains in reinforcing steel shall be:
Piers (Average extreme fiber strains in plastic hinge):
Design Evaluation Earthquake ε_{s}DEE perSDC
Beyond DEE (DLS) ε_{s}perSDC

where ε_{su} is the steel strain at ultimate stress.
For Grade 60 (A706) reinforcement ε_{su} may be taken as:
Confinement bars No. 10-32 (No. 3-10) $\varepsilon_{su}=0.12$
Main bars No. 29-57 (No. 9-18) $\varepsilon_{su}=0.09$

4.10.3 Structural steel

Table 4.10.3-Limiting Values for Steel Stress-Strain Curves

fy (MPa) (ksi)	fu (MPa) (ksi)	ε_y	ε_{sh}
345 (50)	460 (67)	0.0016	0.02
830 (120)	1040(150)	0.005	0.01
-	1110(160)	0.0053	0.01

4.11 Seismic Detailing

4.11.1 Concrete
Ductile detailing is required for all ductile components. The detailing and proportioning requirements relating to splices and confinement in plastic hinge zones shall be in accordance with SDC chapter 8. The detailing and proportioning of concrete joints to address joint shear shall be in accordance with SDC Chapter 7.

4.11.2 Steel
For ductile substructures, compact sections shall be provided in all connections and where inelastic behavior is expected under the Beyond-DEE-Basis criteria (DLS). The slenderness ratio (kl/r) of primary diagonal bracing in vertical frames shall not exceed 80 and the sections shall be compact.

For Move-Out of Span YB4 and Move-In of East Tie-In (whether by rolling, skidding, lifting or other operations), all steelwork (support structure and ancillary equipment) shall comply with requirements for compact sections (maximum slenderness ratios corresponding to plastic limit state per AISC-LRFD).

4.12 Design Seismic Loading-Temporary Construction.
Temporary Construction that is attached (coupled) to the TBS shall be considered to be the TBS and shall be designed for the DEE and DLS.

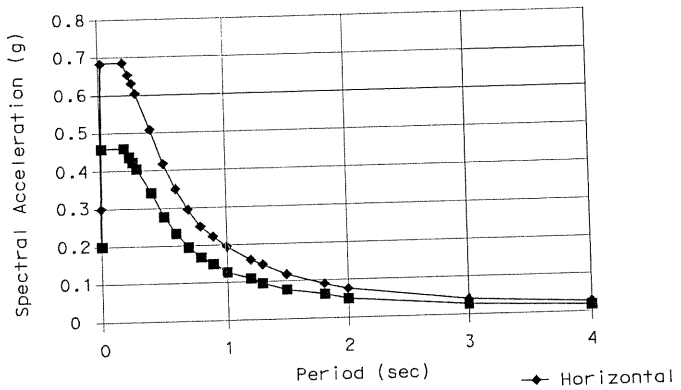
Temporary Construction that is NOT attached (de-coupled) to the TBS shall be designed for the following Horizontal and Vertical Loading.

Horizontal
Ordinary - No Seismic Loading Criteria; lateral loads shall derived as indicated in the Standard Specifications and this Design Criteria.

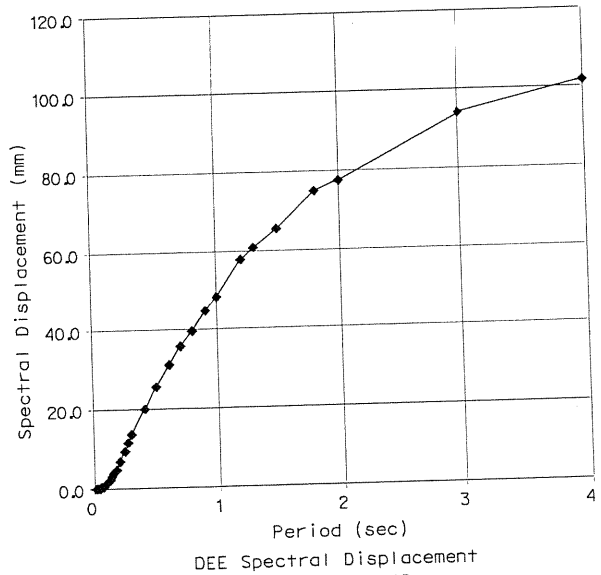
Important - Seismic Loads that are the greater of the response spectrum specified under Section 4.1.2 Design Evaluation Earthquake (DEE), or 0.2g equivalent static inertial loads.

Vertical
Ordinary: No seismic loading
Important:
- Equivalent Static Vertical Load shall be 2/3 of the horizontal seismic load

7 Seismic Lateral Earth Pressure ~~Increment~~
Ordinary - None
Important - as defined by the Geotechnical Engineer of Record.



DEE Response Spectrum
Figure 4.1.2A



DEE Spectral Displacement
Figure 4.1.2B

TABLE 4.1.2A
Design Evaluation Event (DEE)

Period (sec)	Horizontal Acceleration (g)	Vertical Acceleration (g)
0.00	0.300	0.200
0.01	0.686	0.457
0.1	0.686	0.457
0.2	0.686	0.457
0.24	0.654	0.436
0.27	0.631	0.421
0.3	0.606	0.404
0.4	0.509	0.339
0.5	0.416	0.277
0.6	0.349	0.233
0.7	0.295	0.197
0.8	0.251	0.167
0.9	0.223	0.149
1	0.194	0.129
1.2	0.161	0.107
1.3	0.144	0.096
1.5	0.117	0.078
1.8	0.093	0.062
2	0.078	0.052
3	0.042	0.028
4	0.0255	0.017

TABLE 4.1.2B
Design Evaluation Event (DEE)

Period (sec)	Elastic Horizontal Displacement (mm)
0.01	0
0.1	1
0.2	7
0.24	9
0.27	11
0.3	14
0.4	20
0.5	26
0.6	31
0.7	36
0.8	40
0.9	45
1	58
1.2	60
1.3	60
1.5	65
1.8	75
2	77
3	94
4	102

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	BY	CHECKED
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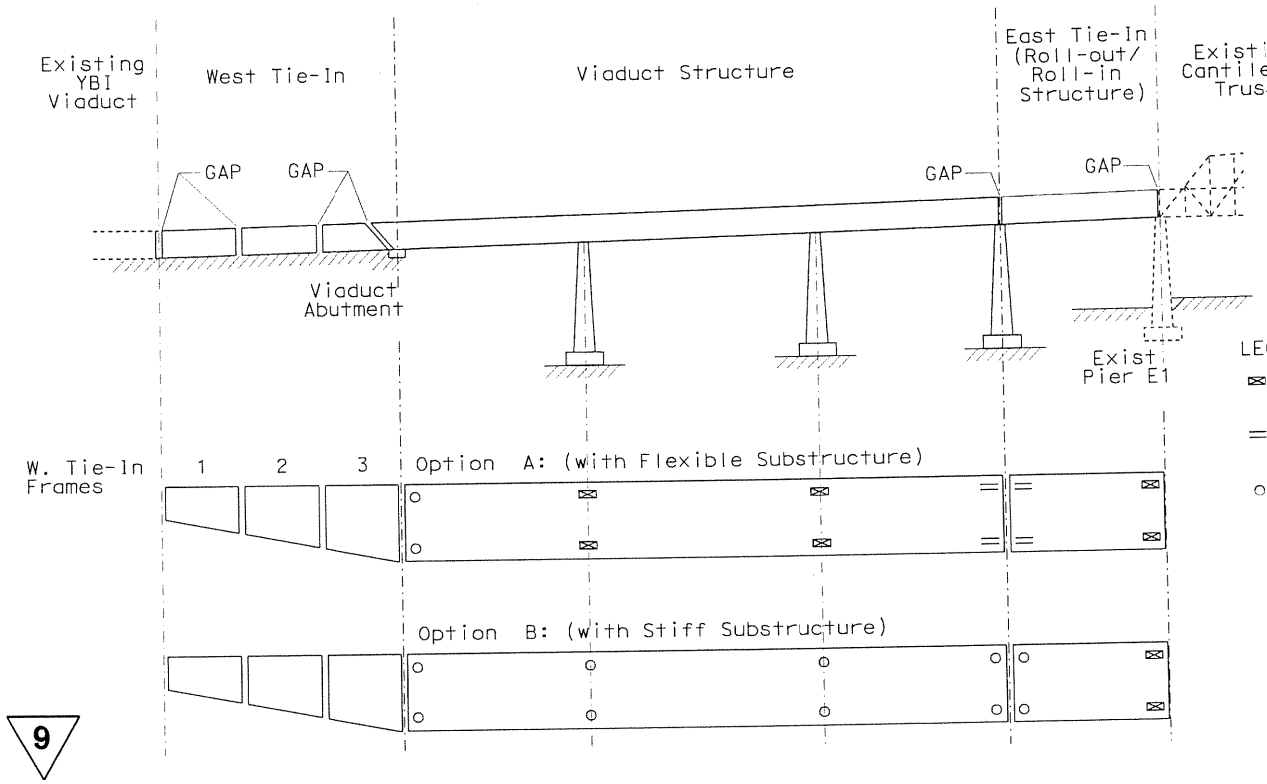

NOTE: Two towers shown for Viaduct Substructure (illustrative proposes only).

LEGEND - Top of Pier Supports:

- ⊠ Bearing restrained in longitudinal & transverse directions.
- = Bearing restrained in transverse direction.
- ○ Load-limiting device unrestrained in both directions. See Design Criteria.

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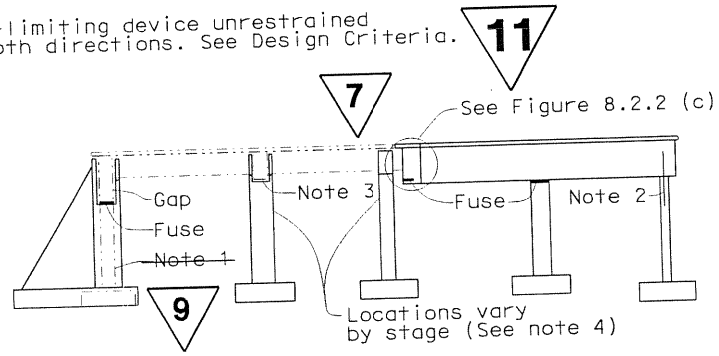
Note:

1. For West Tie-In plan articulation stages, see Figures 4.2 (a) through (h)
2. Expansion Joint between West Tie-in Frames 1 and 2 is optional.

Schematic Elevation and Plans - Articulation of Temporary Bypass Structure

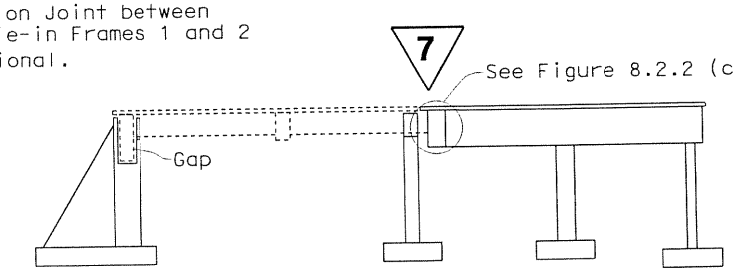
Figure 4.2



Notes:

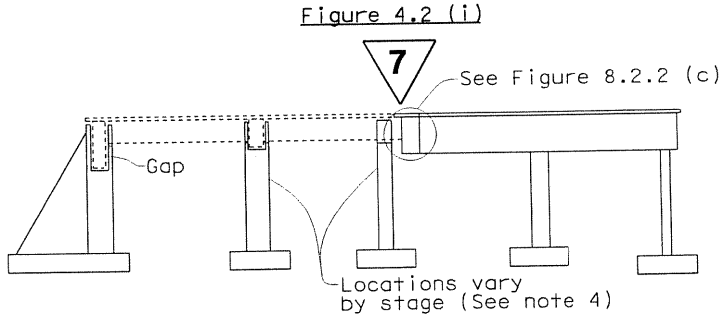
~~1. Existing columns shall be 50 mm sawcut, at locations shown on Plans, to limit propagation of cracking and to protect superstructure.~~

2. Tension connection is to remain elastic during DEE.
3. Attachment to the existing structure shall be the fuse in the system that transfers inertial forces from the existing to the temporary supports.
4. See Design Criteria No. 7 sheet for Figures 4.2(a) through 4.2(h).



Schematic Section - West Tie-In Articulation Bents 39 to 42

Figure 4.2 (i)

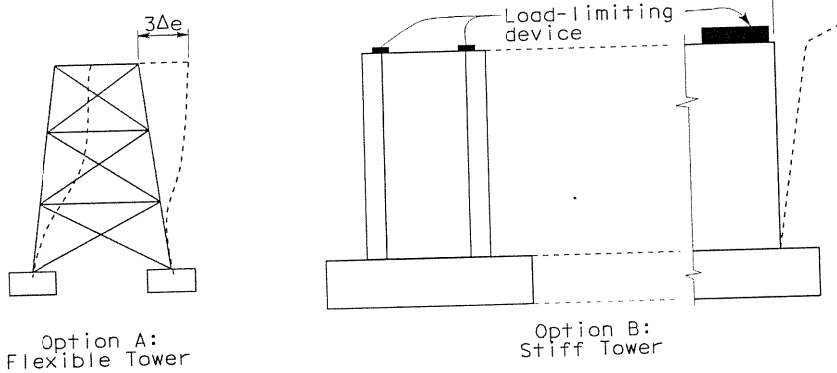


Schematic Section - West Tie-In Articulation Bents 43 to 48

Figure 4.2 (j)

Schematic Section - West Tie-In Fuse Locations

Figure 4.7.1 (a)



Schematic Tower Fuse Options for Viaduct and East Tie-In

Figure 4.7.1 (b)

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TEMPORARY BYPASS STRUCTURES

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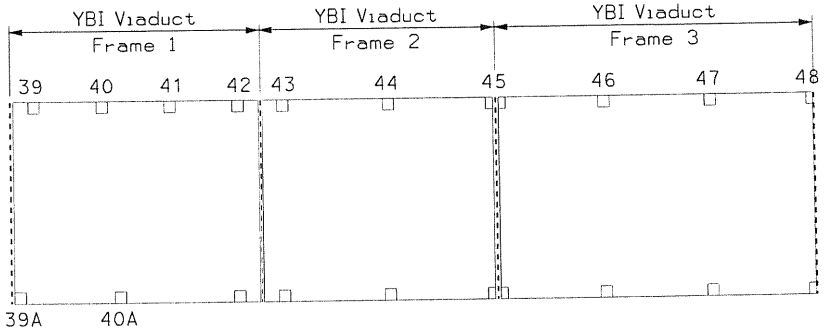


Figure 4.2 (a): Schematic Plan - Existing YBI Viaduct

7 Expansion joints ~~fill (designed by others) to be provided~~ at all locations ~~joints~~ between Bent 38 & YB1 (as shown above with dashed line) shall be modified to restrict differential longitudinal movement between frames for the DEE.

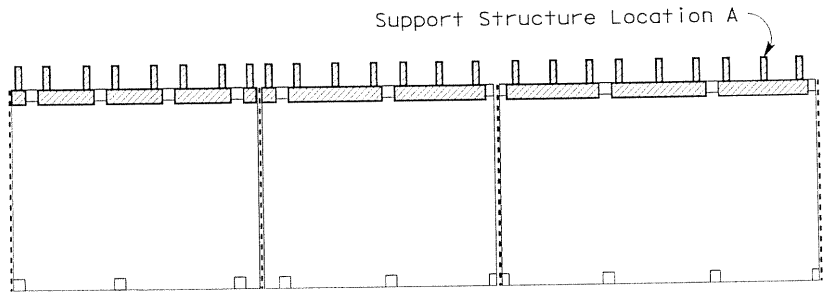
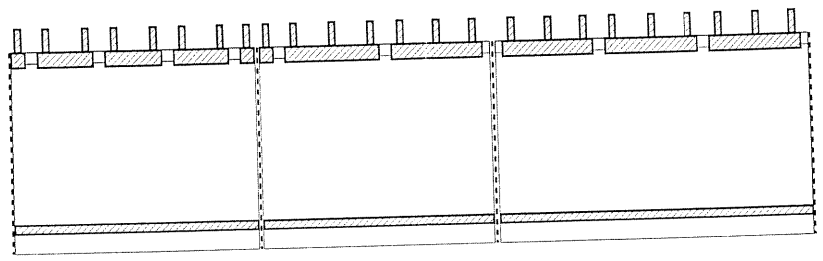


Figure 4.2 (b): Schematic Plan View

Step 1 - Provide cradle for vertical support and laterally support north edge (edge girder, floor beams & deck) of Existing YBI Viaduct.



9 Figure 4.2 (d): Schematic Plan View

Step 3 - Remove existing south columns (Bents 39 to 48) and remove portions of south edge girder. ~~Provide 50 mm concrete as shown on Plans.~~

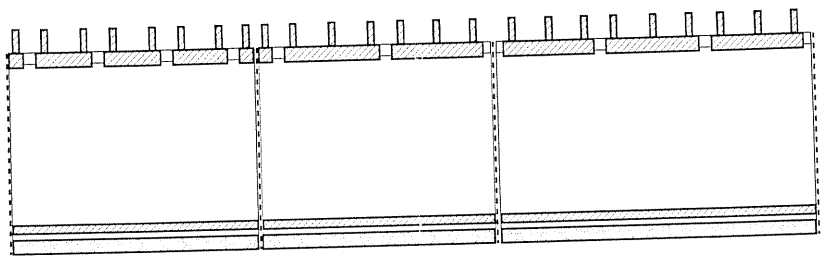
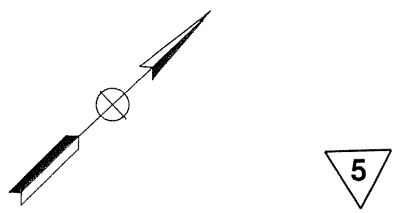


Figure 4.2 (e): Schematic Plan View

Step 4 - Construct new south edge girder and bolster to receive West Tie-In outrigger supports.



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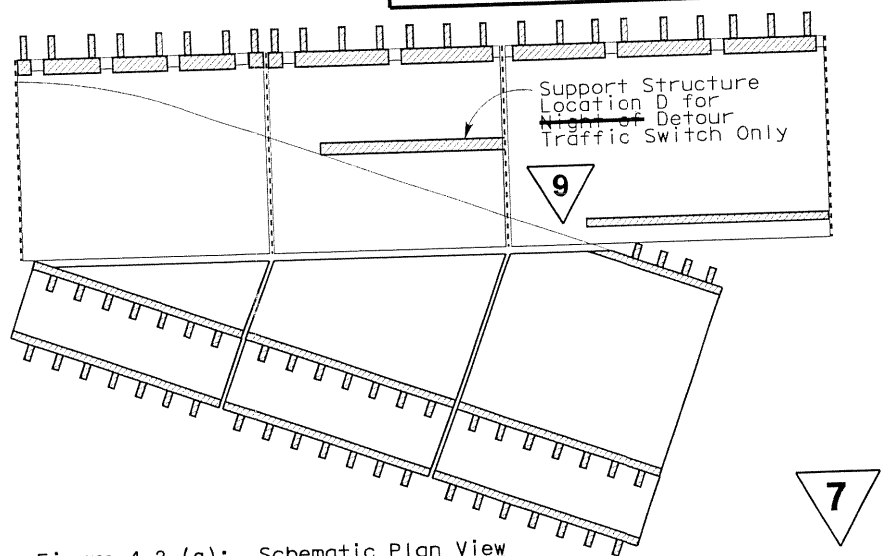

Figure 4.2 (g): Schematic Plan View

Step 6 - Provide temporary ~~vertical supports and~~ lateral bracing along center longitudinal girder ~~to control deflection~~ between Bents 44 - 45. Remove supports between Bents 39 - 46. Open West Tie-In to Bypass traffic.

9 **REVISED PER ADDENDUM NO. 9 DATED SEPTEMBER 4, 2003**

7 **REVISED PER ADDENDUM NO. 7 DATED AUGUST 4, 2003**

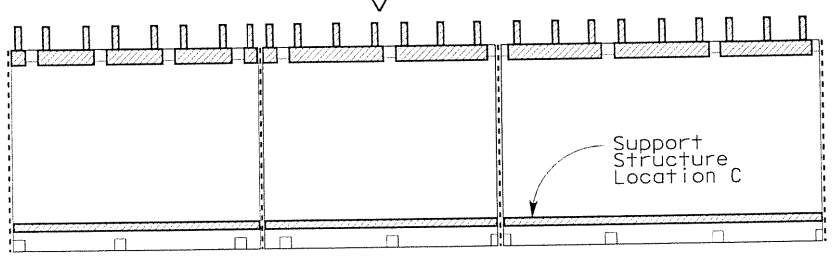

Figure 4.2 (c): Schematic Plan View

Step 2 - Create vertical and lateral support for all floor beams along south edge of Existing YBI Viaduct, inside column line.

NOTE:

Articulation of West Tie-In changes at each step, and its configuration is dependent on the order of work and operation sequence. See West Tie-In operation sequence sheets, order of work, and stage construction sequence sheets (on Road Plans).

5 **REVISED PER ADDENDUM NO. 5 DATED JUNE 27, 2003**

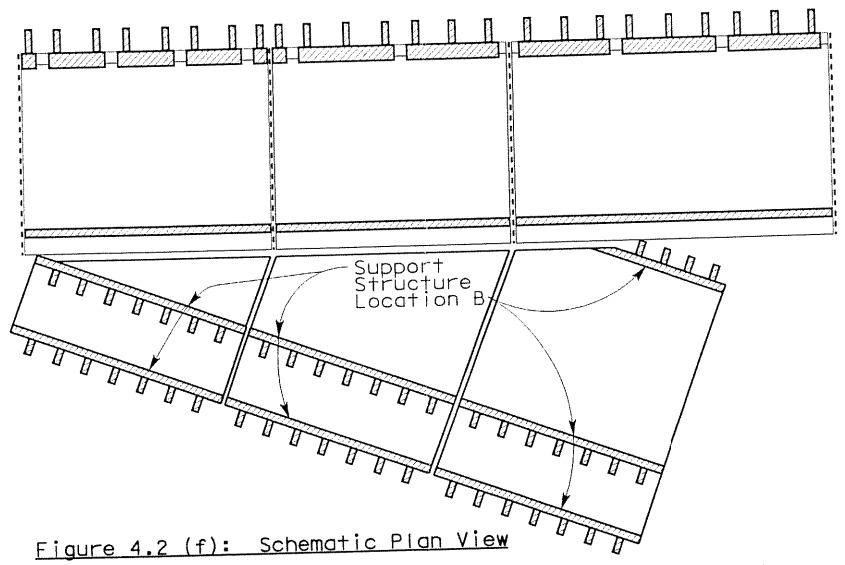

Figure 4.2 (f): Schematic Plan View

Step 5 - Construct new West Tie-In outriggers and portal frames to support south edge of Existing YBI Viaduct.

9 ~~Place lateral load restraining system after detour open to traffic~~

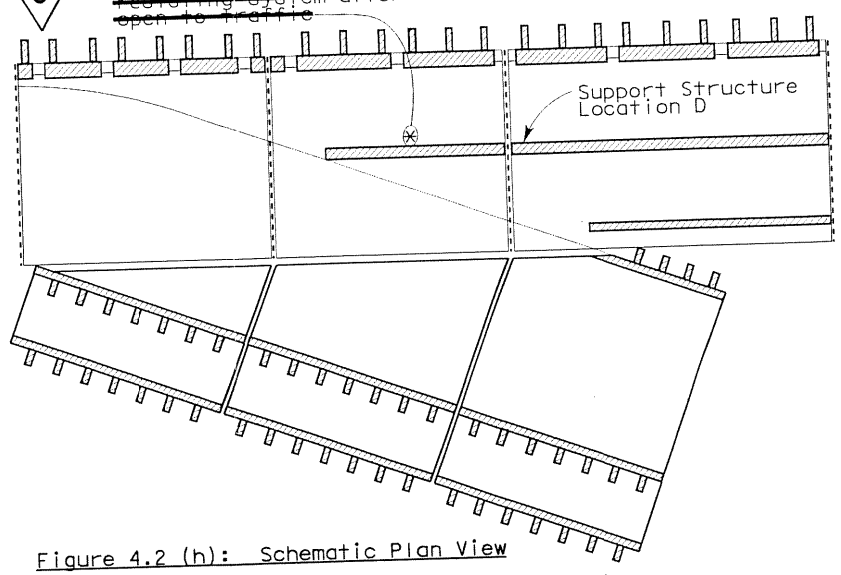

Figure 4.2 (h): Schematic Plan View

Final Step - Construct center girder support between Bents 44 - 48.

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SIGN OFF DATE		DETAILS BY C. Subrizi	CHECKED R. Mutobe			KILOMETER POST 12.6	TEMPORARY BYPASS STRUCTURES
		QUANTITIES BY N/A	CHECKED N/A		CU 04251 EA 0120R1	DISREGARD PRINTS BEARING EARLIER REVISION DATES →	DESIGN CRITERIA NO. 7

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3-31-03 PLANS APPROVAL DATE

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3-31-03
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JUAN A. MURILLO
No. C051722
Exp. 6-30-05
CIVIL
STATE OF CALIFORNIA

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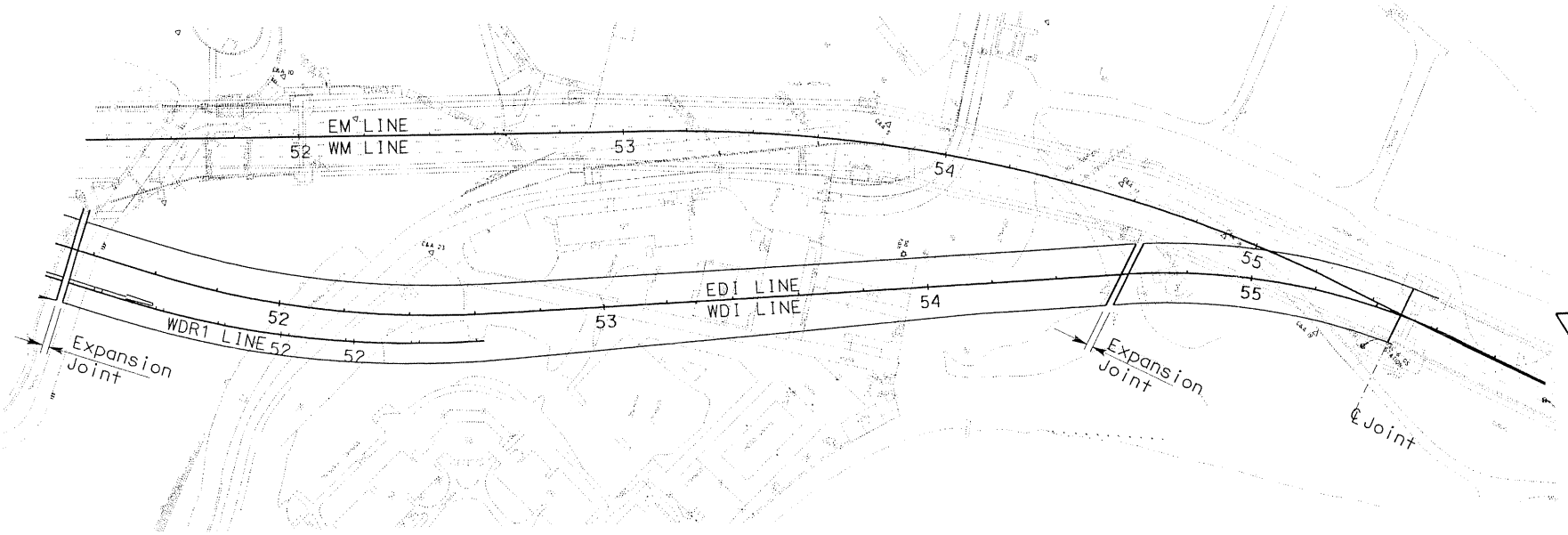
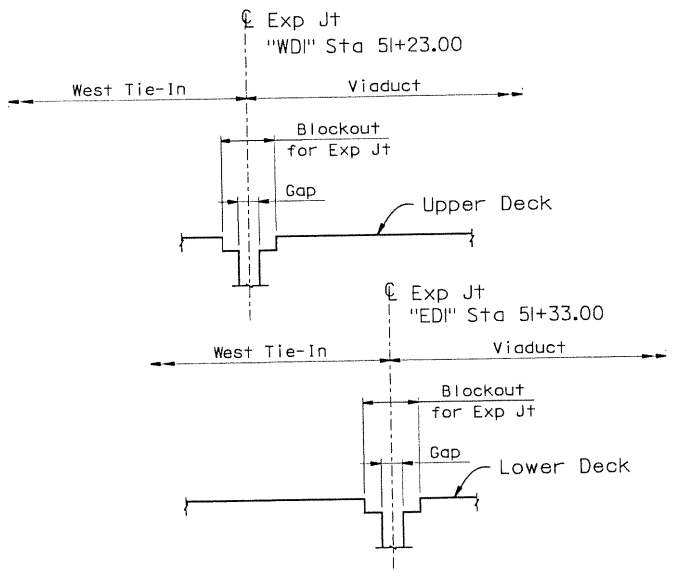
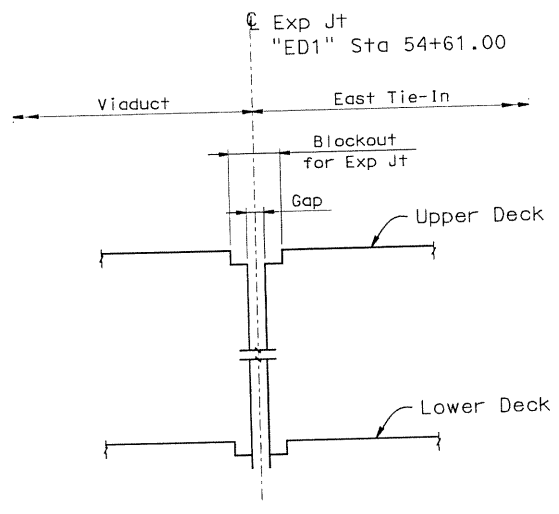


FIGURE 5.1:
EXPANSION JOINT PLAN

11 REVISED PER ADDENDUM NO. 11 DATED OCTOBER 6, 2003



EXPANSION JOINT LIMITS AT WEST TIE-IN



EXPANSION JOINT LIMITS AT EAST TIE-IN

3 REVISED PER ADDENDUM NO. 3 DATED JUNE 6, 2003

10

5. EXPANSION JOINTS AND SEAT WIDTHS

5.1 Expansion Joints
Bridge expansion joints are located as shown in Figure 5.1 to establish TBS segment limits for bidding purposes only. Joints may be modular (excluding metal to metal contact). They shall be designed to span the gap between segments and for movement demands from temperature rise and fall, creep and shrinkage, and the design evaluation earthquake (DEE) and DLS displacements. Temperature movements need not be combined with seismic movements.

Modular expansion joints shall be sized to be functional (water seals may be damaged) throughout the range of movement (translations & rotation) associated with the DEE. During the opening cycle of the DLS, the joint shall be designed to carry live loads, and the length of the support bars shall be sized such that separation beams and bearing bars will no become unseated.

5.2 Seat Widths
Seat widths shall be sized such that joints can open fully under three times the DEE elastic response without losing seat on the bearings. Minimum gap lengths shall be the sum of magnitudes of relative longitudinal displacement responses (three times the elastic spectral displacements) for abutting structures. Minimum seat widths shall be in accordance with SDC.

6. BRIDGE DRAINAGE

Drainage for the Temporary Bypass Structure shall be designed in accordance with procedures and details outlined in Caltrans Memo to Designers 18-1 (June 1989) and Bridge Design Aids 17-1 (October 1989).

Drainage for the Temporary Bypass Structure is Class I. Drains shall not be within the lanes.

The transverse drainage of the roadway shall be provided by a suitable crown in the roadway surface and longitudinal drainage by camber or gradient. Water flowing downgrade in a gutter section shall be intercepted and not permitted to run onto the bridge. Longitudinal drainage on long bridges shall be provided and collected at inlets which shall be of sufficient size and number to drain the gutters adequately. Downspouts, where required, shall be made of rigid corrosion-resistant material not less than 100 mm in least dimension and shall be provided with cleanouts. The details of deck drains shall be such as to prevent the discharge of drainage water against any portion of the structure or on moving traffic below, and to prevent erosion at the outlet of the downspout. Deck drains may be connected to conduits leading to storm water outfalls at ground level. Overhanging portions of concrete decks shall be provided with a drop bead or notch. The outlet of deck runoff shall be located at concrete lined v-ditches as shown on the contract plans.

7. GEOTECHNICAL AND FOUNDATION DESIGN

The design of the foundations will be based on the Eastbound Detour sections of "Geotechnical Foundation Report for Yerba Buena Island Approach and Self-Anchored Suspension Bridge" (100% Submittal), Fugro - Earth Mechanics JV, June 2002.

7.1 Earth Retaining Structures
Permanent & temporary ER structures will be based on the Eastbound Detour sections of "Geotechnical Foundation Report for Yerba Buena Island Approach and Self-Anchored Suspension Bridge (100% Submittal), Fugro-Earth Mecnanics JV, June 2002.

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SAN FRANCISCO OAKLAND BAY BRIDGE
EAST SPAN SEISMIC SAFETY PROJECT

TEMPORARY BYPASS STRUCTURE
DESIGN CRITERIA NO. 8

DESIGN OVERSIGHT
SIGN OFF DATE

	BY	CHECKED
DESIGN	J. Murillo	C. Subrizi
DETAILS	C. Subrizi	R. Mutobe
QUANTITIES	N/A	N/A

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

David Williams
PROJECT ENGINEER

CU 04251
EA 0120R1

BRIDGE NO. 34-0006 (TEMP)
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8. WEST TIE-IN OPERATIONS

9 REVISED PER ADDENDUM NO. 9 DATED SEPTEMBER 4, 2003

8.1 Existing YBI Viaduct

8.1.1 Reinforced Concrete
Original 1934:
Concrete: f'c= 3000 psi, fc=1200 psi, n=10
Prestressed Concrete: f'c=4500 psi, fc=1800 psi, n=8.
Reinforcement: fy= 33 ksi
Unit weight (reinforced) = 150 pcf

1964 Modifications:
Lightweight Concrete: f'c= 4500 psi, fc=1800 psi, n=15
Reinforcement - Intermediate Grade: fy= 40 ksi per CRSI
Prestressed Concrete - Lightweight (CIP): f'c=4500 psi, fc=1800 psi, n=15
Prestressed Concrete - Lightweight (precast): f'c=4500 psi, fc=1800 psi, n=15
Prestressing bars: fs=87 ksi, fy=145 ksi
Unit weight (reinforced) = 120 pcf

8.2 Required Support Structure Locations
Location A. Bracing which "Cradles" the north edge girder, providing vertical & Lateral Support
Location B. West Tie-in structure support of South edge girder, and Vertical and Lateral Support of West Tie-in Bypass Structure.
Location C. Vertical and Lateral Support for Transverse "Built-Up" (CIP & PC/PS) Floor Beams, inside existing south edge girder
9 Location D. ~~Vertical and~~ Lateral Support (walls or braced frames - life of bypass) for Center Longitudinal Girder from Bent 44 to Bent 48
For seismic articulation of West Tie-In, see Section 4.2.

8.2.1 Support Structure Design Loads
Dead Load (DL) of the existing YBI Viaduct Frames (defined in Fig. 4.2(a)) shall be as shown in Table 8.2.1.

Superimposed Dead Load (SDL) shall be derived per the Roadway Plans and Structural Design Criteria.

Live Load (LL), thermal and wind loads shall be per Sect. 2 of this Design Criteria.

The target fundamental period for transverse and longitudinal lateral response shall be 0.55 sec +/- 0.05 sec. Vertical response shall be in accordance with Sect. 4 and deflection limits shown in Table 8.7.1.

Table 8.2.1 - YBI Viaduct Dead Load *

Frame 1	19040 kN (4280 kips)
Frame 2	17640 kN (3965 kips)
Frame 3	25310 kN (5690 kips)

* Based on unit weights shown in Sect 8.1.1

8.2.2 Support Structure Design ~~Loads~~ - Connection to Existing Structure

9 SSL Location A, C & D

Connection to Floorbeam
A bearing type connection to the existing structure shall be provided using blocking. The design forces shall be derived per 8.2.1. Blocking shall have a contact surface within H shown in fig 8.2.2 (a) and support structure limits.

Maximum bearing stress on the floorbeam shall be based on the properties in 8.1.

The grains of the timber blocking should be parallel to the vertical axis (contact load perpendiculat to grain) of the existing floorbeam and shall have the following design value: Compression perpendicular to the grain = 625 psi max and 375 psi min.

Shims used to secure the blocking shall be cut from hardwood.

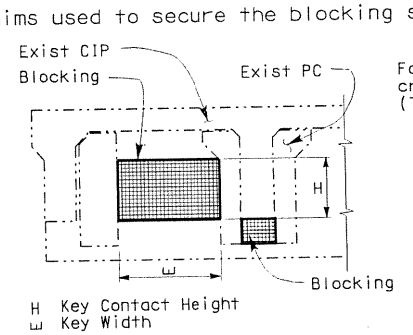

Figure 8.2.2 (a)
Support Structure shear key, Connection to exist floor beam.

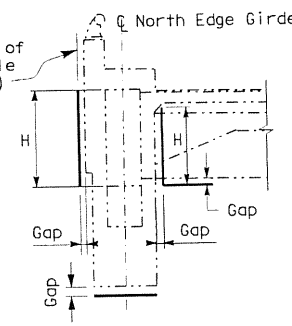

Figure 8.2.2 (b)
(Center Girder Similar)

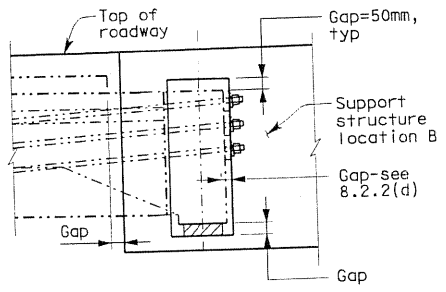

Figure 8.2.2 (c)

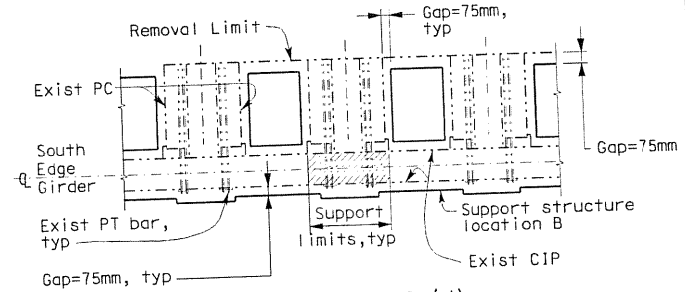

Figure 8.2.2 (d)

Connection to Edge Girder & Center Girder
A bearing type connection to the existing structure shall be provided by the cradle as shown in fig 8.2.2 (b). The cradle shall have a gap of 50-mm (2 in.) between it and the existing structure. The gap shall be filled by an elastomeric pad. Maximum bearing stress on the edge girder shall be based on the properties in 8.1.

SSL Location B
Connection to Floorbeam - No positive connection shall be made with the floorbeam. A gap shall be provided between the Support and the floorbeam's as shown in Fig 8.2.2 (c) & (d).

Connection to Edge Girder - A bearing type support shall be provided within the support limits shown in Fig 8.2.2 (c) & (d). A gap between the support and the top and bottom of the edge girder shall be provided as shown in Fig 8.2.2 (c) & (d). The bottom gap shall be occupied by an elastomeric bearing.

9 SSL Location D and portions of SSL Location C which lie within the Eastbound TBS traffic opening shall be designed as panels which can be installed or removed during Stage 2.

8.3 Cons-ruction Sequence - West Tie-In
Refer to Order of Work, Stage Construction Sheets (on Road Plans), and West Tie-In Operation Sequence Sheets.

8.3.1 A/C Laydown Compaction Limitations
No vibration equipment permitted on the existing YBI Viaduct.

8.4 West Tie-In Articulation
Clear load paths and stability for both vertical and lateral loads for the West Tie-In and the Existing YBI Viaduct shall be maintained at all stages of construction and for the life of the Temporary Bypass Structure.

Articulation shall be as shown on the Design Criteria Sheets and incorporate provision for future access within the limits shown on "Support Structure Limits Location A" Sheets. Future access shall require that one panel, defined by the limits shown, be removed per frame in order to affect the final seismic retrofit of the existing YBI Viaduct. The natural period of the temporary support system in the configuration shown in figure 4.2(h) shall remain within the target range shown in Section 8.2.1.

8.5 Stability of Bracing and Support Elements for Existing YBI Viaduct
Structure Supports shall have kL/r no greater than 80, where k is no less than unity, L is the length of the element, and r is the radius of gyration about the principal axis. All bracing and support elements shall be considered as primary members and reviewed for stability as such.

8.6 Bridge Removal (Portion)

8.6.1 Modifications to Existing Structure
No modifications, other than those shown on plans, shall be allowed for the Existing YBI Viaduct. Every effort shall be made to protect the existing structure during construction and removal of bridge components.

9 8.6.2 South Edge Girder Partial Removal
Existing post-tensioning anchorages for floor beams in the existing edge girders shall be protected. Existing edge girder ~~haunches~~ soffits shall be removed to 100 mm (4 inches) below PC/PS floor beams.

8.6.3 Monitoring of Existing Post Tensioning Systems
After the partial removal has been affected each post tensioning rod at each West Tie-In floorbeam between Bent 39 & 48 shall undergo Non Destructive Testing (NDT). Subsequent NDT shall continue on a regular schedule through the life of the Temporary Bypass structure as agreed upon between Caltrans and the Contractor.

8.7 Deflection Control

8.7.1 Vertical Deflection
Differential vertical deflection on the Existing YBI Viaduct shall be limited to values shown in Table 8.7.1.

11 DL+SDL+LL
DL+SDL+EQ(DEE)

Table 8.7.1 - Vertical Deflection Limitations

LOAD CASE	ALLOWABLE DEFLECTION AT -A-*
DL+SDL	5 mm
~~DL+LL~~	15 mm
~~DL+EQ(DEE)~~	15 mm

* See Fig 8.7.1

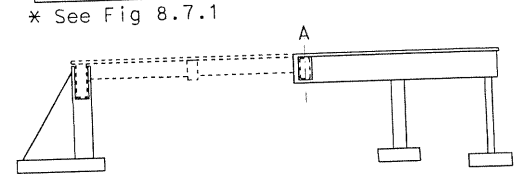

Figure 8.7.1: Schematic Section - West Tie-In
(Support Structures vary. Schematic sections shown between Bents 39-46)

8.7.2 Jacking Systems
Jacking systems shall be provided to control deflections on the Existing YBI Viaduct, during construction and during the life of the Temporary Bypass Structure. Jacking supports shall be provided on Support Structure Locations A, B, and C.

8.7.3 Post-Tensioning Systems
Post-tensioning systems may be used to control deflections on the West Tie-In during construction and during the life of the Temporary Bypass Structure. Post-Tensioning Systems shall be provided at support structure location B to meet the vertical deflection cristeria defined in Table 8.7.1 for dead load and superimposed dead load.

8.8 Deflection Monitoring
Deflections of the existing YBI Viaduct shall be monitored on a regular schedule during Temporary Bypass Construction as agreed upon between the Contractor and Caltrans. Deflection monitoring systems such as (but not limited to) strain gage placement on existing columns and surveying of vertical deflection of south edge girder, etc., shall be incorporated.

Deflection monitoring shall be incorporated after temporary supports are moved to facilitate Bypass structure traffic, but before the West Tie-In is open to traffic.

Deflection monitoring of the bypass structure shall continue on a regular schedule through the life of the Temporary Bypass structure.

8.9 Important Temporary Shoring - DEE & DLS Performance
Lateral movements shall be restricted to values that are consistent with achieving the target fundamental period for the DEE, achieving the DLS displacement goals and the specified deflection limitations.

Earth pressures consistent with these movements shall be recommended by the Geotechnical Engineer of Record.

7 REVISED PER ADDENDUM NO. 7 DATED AUGUST 4, 2003

5 REVISED PER ADDENDUM NO. 5 DATED JUNE 27, 2003

11 REVISED PER ADDENDUM NO. 11 DATED OCTOBER 6, 2003

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EAST SPAN SEISMIC SAFETY PROJECT

TEMPORARY BYPASS STRUCTURES

DESIGN CRITERIA NO. 9

DESIGN	BY J. Murillo	CHECKED C. Subrizi	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
DETAILS	BY C. Subrizi	CHECKED R. Mutobe	
QUANTITIES	BY N/A	CHECKED N/A	

Juan A. Murillo
PROJECT ENGINEER

BRIDGE NO. 34-0006(TEMP)
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9 TEMPORARY STABILIZATION FOR SPANS YB4 & YB3

9.1 General
Existing YB1 Spar YB3 (Pier YB3 - Pier YB4) and Span YB4 (Pier YB4 - Pier E1) shall be stabilized prior to release of any existing anchorage of Span YB4 (at Piers E1 and YB4).
All connections to existing steel truss members shall be bolted.
For connection design to existing truss, use allowable tensile stress of 140 MPa (20 ksi).

9.2 Anchorage of Span YB4 at Pier E-1
Minimum temporary anchorage for span YB4 at Pier E1 prior to releasing existing anchorage (cut through shoe) and until transfer of span to skid beam or support for move-out, shall be:
i) 2400 kN at each bottom chord of N. & S. truss in the transverse direction
ii) 2400 kN in each bottom chord of N. & S. truss in the longitudinal direction

9.3 Anchorage of Span YB4 at Pier YB4
Minimum temporary anchorage for span YB4 at Pier YB4 prior to releasing existing anchorage (cut through shoe) and until transfer of span to skid beam or support for move-out, shall be:
i) 2400 kN at each bottom chord of N. & S. truss in the transverse direction
ii) 2400 kN in each bottom chord of N. & S. truss in the longitudinal direction

9.4 Restraint of Span YB3 at Piers YB3 & YB4
Minimum temporary restraint for span YB3, prior to releasing existing anchorage of Span YB4 and until complete removal of the span, shall be:
i) at Pier YB4, 2400 kN at each bottom chord of N. & S. truss in the transverse direction
ii) at Pier YB3, 2400 kN tie across each bottom chord of N. & S. truss between Spans YB2 and YB3, in the longitudinal direction

10 MOVE-OUT SPAN YB4 OPERATION

10.1 Move-Out Weight
Estimated weight of Span YB4 is 2200~2550 tonne (including decks). Move-out system shall be capable of moving at least 3000 tonne plus any construction-applied load.

10.2 Span YB4 Move-Out System - General
Support structures shall be designed so that local buckling and lateral torsional buckling do no- occur.

10.3 Skid-Out Transfer Beam Vertical Stiffness
The skidway shall be sufficiently stiff in the vertical direction so that the maximum slope along the skidway during any phase of the skidding operation is no more than 0.2%. The maximum deflection shall not exceed 10 mm. Deflections shall be monitored during skidding operation.

10.4 YB4 Move-Out Skidway Support System
The move-out skidway support system for each end (YB4 and E-1) shall be designed for:
i) a minimum lateral (parallel to span YB4) strength so that response is elastic to a total force of 5000 kN applied at skidway elevation; and lateral stiffness so that the fundamental period of vibration during skidding is less than 1 second.
ii) a minimum longitudinal (normal to span YB4) strength so that response to a total force of 5000 kN applied at skidway elevation is elastic and symmetric about midspan; and lateral stiffness so that the fundamental period of vibration during skidding is less than 0.5 second.
iii) a minimum vertical stiffness corresponding to:
maximum foundation settlement of 10 mm
maximum differential settlement of 5 mm
minimum foundation dimension of 3 m

10.5 Skidding System Operation
Plans and a wri-ten procedure shall be prepared for the skidding operation. Plans shall show and describe the skidding system, equipment, all load-carrying components and anticipated construction (skidding) load to be applied to span (for structural analysis). Mechanical and structural details for the skidding mechanism and attached components must be complete. The system shall have provision for adjustment of the position of the moved span at final location (lateral and vertical). The procedures shall include: proposed jacking control, manifolding arrangements and hydraulic pressures; calibration procedures and certification; description of fail-safe control system; proof testing of the system and rehearsal of the operation; description of the required monitoring system; and compensation system for track deflection. Positive braking shall be required during the skidding operation (hydraulic). Rehearsal shall exercise all equipment and involve all personnel planned for use in the moving operation. System shall be designed to perform move out of Span YB4 in a time consistent with the special provisions.

10.6 Monitoring and Contingency Plan
The Contractor shall submit a monitoring plan for continuous automatic monitoring and documenting the move-out operation. The Contractor shall identify the major risks associated with moving operations and develop a contingency plan to mitigate these risks. Contingency actions such as requirements for reliable power sources, and adequate staffing shall be included in the plans. Back up equipment and alternate plans for safety and time-critical operations shall be provided.

11. MOVE-IN EAST TIE-IN SPAN OPERATIONS (ROLL/SKID-IN SYSTEM)

11.1 East Tie-In Move-In System - General
Support structures shall be designed so that local buckling and lateral torsional buckling do not occur.

11.2 Roll/Skid-In Transfer Beam Vertical Stiffness
The skidway shall be sufficiently stiff in the vertical direction so that the maximum slope along the skidway during any phase of the skidding operation is no more than 0.2%. The maximum deflection shall not exceed 10 mm. Deflections shall be monitored during skidding operation.

11.3 Roll-In Skidway Support System
The move-in skidway support system shall be designed for:
Adequate lateral (parallel to span) and longitudinal (normal to span) strength and stiffness.
A minimum vertical stiffness corresponding to:
maximum foundation settlement of 10 mm
maximum differential settlement of 5 mm
minimum foundation dimension of 3 m

11.4 Roll-In Skidding System Operation
Plans and a written procedure shall be prepared for the roll-in skidding operation. Plans shall show and describe the skidding system, equipment, all load-carrying components, and anticipated construction (skidding) loads to be applied to span (for structural analysis). Mechanical and structural details for the skidding mechanism and attached components must be complete. The system shall have provision for adjustment of the position of the moved span at final location (lateral and vertical). The procedures shall include: proposed jacking control, manifolding arrangements and hydraulic pressures; calibration procedures and certification; description of fail-safe control system; proof testing of the system and rehearsal of the operation; description of the required monitoring system; and compensation system for track deflection. Positive braking shall be required during the skidding operation (hydraulic). Rehersal shall exercise all equipment and involve all personnel planned for use in the moving operation. System shall be designed to perform move-in of East Tie-In Span in a time consistent with the special provisions.

11.5 Monitoring and Contingency Plan
The Contractor shall submit a monitoring plan for continuous automatic monitoring and documenting the move-in operation. The Contractor shall identify the major risks associated with moving operations and develop a contingency plan to mitigate these risks. Contingency actions such as requirements for reliable power sources, and adequate staffing shall be included in the plans. Backup equipment and alternate plans for safety and time-critical operations shall be provided.

2 **REVISED PER ADDENDUM NO. 2 DATED MAY 22, 2003**

5 **REVISED PER ADDENDUM NO. 5 DATED JUNE 27, 2003**

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

SAN FRANCISCO OAKLAND BAY BRIDGE
EAST SPAN SEISMIC SAFETY PROJECT

TEMPORARY BYPASS STRUCTURES

DESIGN CRITERIA NO. 10

DESIGN OVERSIGHT
SIGN OFF DATE

	BY	CHECKED
DESIGN	J. Murillo	C. Subrizi
DETAILS	C. Subrizi	R. Mutobe
QUANTITIES	N/A	N/A

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

David Williams
PROJECT ENGINEER

BRIDGE NO. 34-0006 (TEMP)
KILOMETER POST 12.6

CU 04251
EA 0120R1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY): 3/21/03 6/18/03

SHEET OF

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

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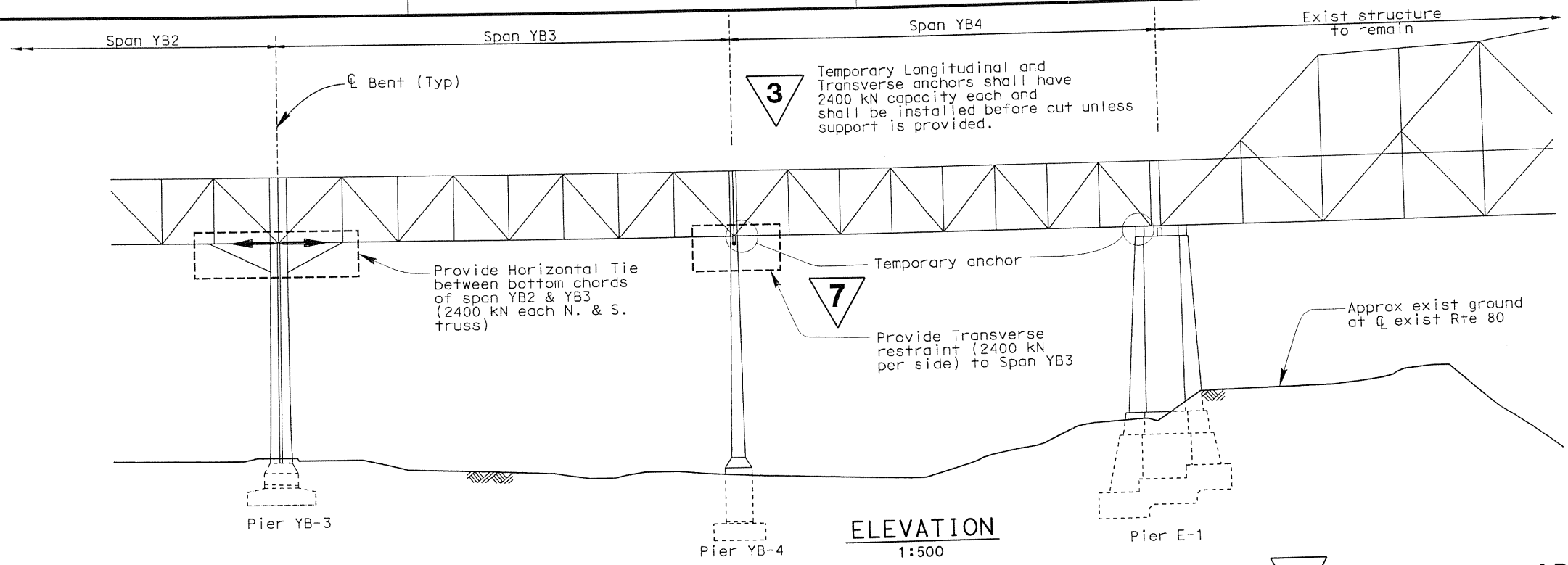

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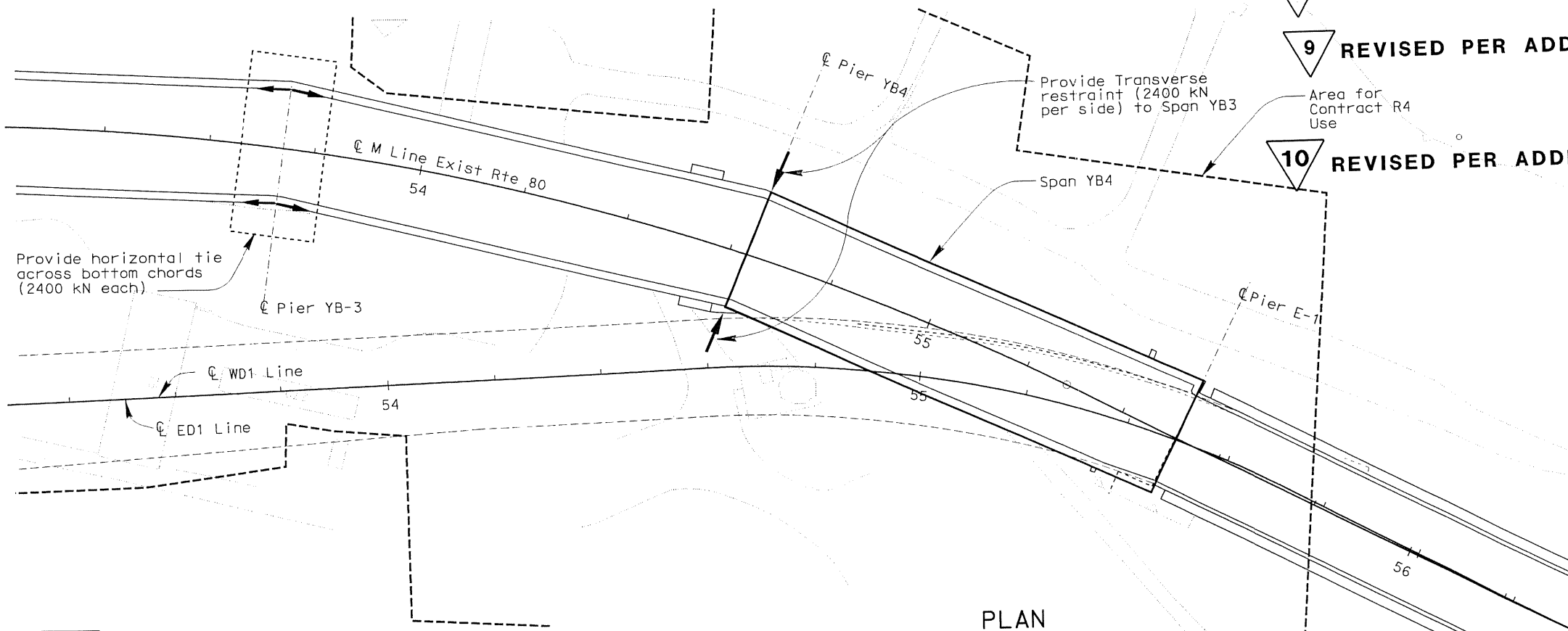

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3 REVISED PER ADDENDUM NO. 3 DATED JUNE 6, 2003

Marine Access
See Note 3

04	SF	80	12.6/13.2	149	193

Caltrans Metric

2-18-03
REGISTERED CIVIL ENGINEER

3-31-03
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JUAN A. MURILLO
No. C051722
Exp. 6-30-05
CIVIL
STATE OF CALIFORNIA

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NOTES:

1. General sequence of operations is shown. Contractor shall submit details of design, operation and sequence of operations, subject to review and approval.
3. 2. All connections of Temporary Bypass Structure to existing Truss shall be bolted type connections.
3. For contract limits, see "Construction Details" sheets on road plans.

9 7

7 REVISED PER ADDENDUM NO. 7 DATED AUGUST 4, 2003

9 REVISED PER ADDENDUM NO. 9 DATED SEPTEMBER 4, 2003

10 REVISED PER ADDENDUM NO. 10 DATED SEPTEMBER 22, 2003

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SAN FRANCISCO OAKLAND BAY BRIDGE
EAST SPAN SEISMIC SAFETY PROJECT

EAST TIE-IN

OPERATION SEQUENCE NO.1

DESIGN OVERSIGHT
SIGN OFF DATE

	BY	CHECKED
DESIGN	C. Subrizi	R. Mutobe
DETAILS	G. Benkovich	C. Subrizi
QUANTITIES	N/A	N/A

PREPARED FOR THE STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

David Williams
PROJECT ENGINEER

BRIDGE NO. 34-0006(TEMP)
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CU 04251
EA 0120R1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)
3/21/03

SHEET 58 OF 85

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

DESIGN DETAIL SHEET (METRIC) (REV. 3/1/98)

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Caltrans Metric

REGISTERED CIVIL ENGINEER — 2-18-03

3-31-03
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — JUAN A. MURILLO — No. C051722 — Exp. 6-30-05 — CIVIL — STATE OF CALIFORNIA

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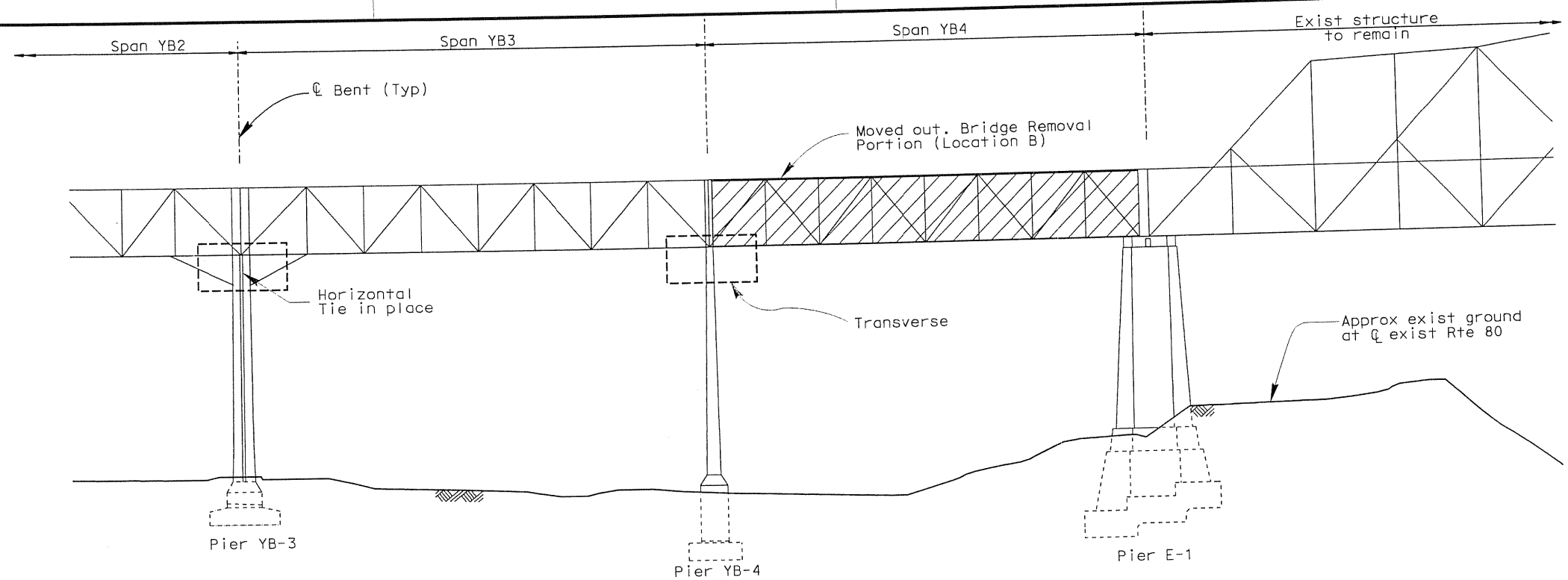

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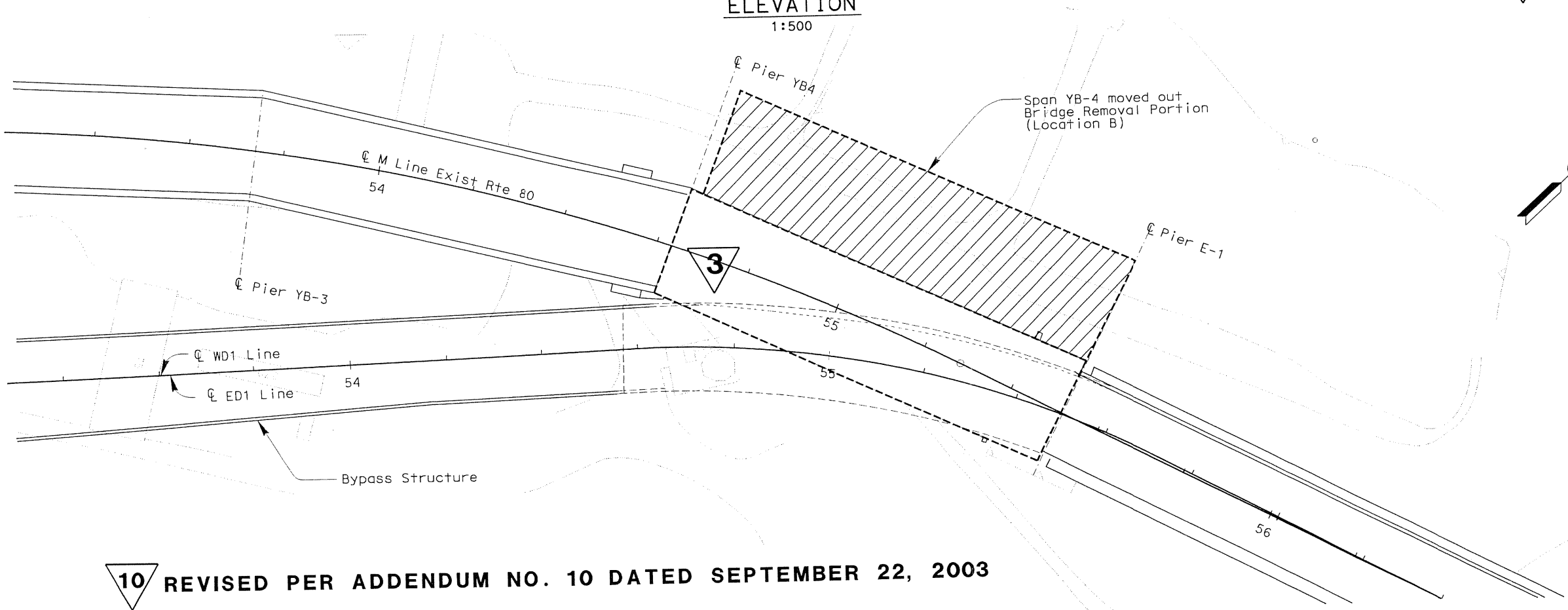

NOTES:

1. General sequence of operations is shown. Contractor shall submit details of design, operation and sequence of operations, subject to review and approval.
3. 2. All connections of Temporary Bypass Structures to existing Truss shall be bolted type connections.
3. 3. For typical section of YB4 span refer to Support Structure sections.
3. Indicates Bridge removal portion (Location B)

10 REVISED PER ADDENDUM NO. 10 DATED SEPTEMBER 22, 2003

3 REVISED PER ADDENDUM NO. 3 DATED JUNE 6, 2003

PLAN
1:500

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

SAN FRANCISCO OAKLAND BAY BRIDGE
EAST SPAN SEISMIC SAFETY PROJECT

EAST TIE-IN

OPERATION SEQUENCE NO.2

DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	C. Subrizi	N. Mutobe
DETAILS	G. Benkovich	C. Subrizi
QUANTITIES	N/A	N/A

PREPARED FOR THE STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

David Williams
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CU 04251
EA 0120R1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY): 3/21/03

SHEET 59 OF 85

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

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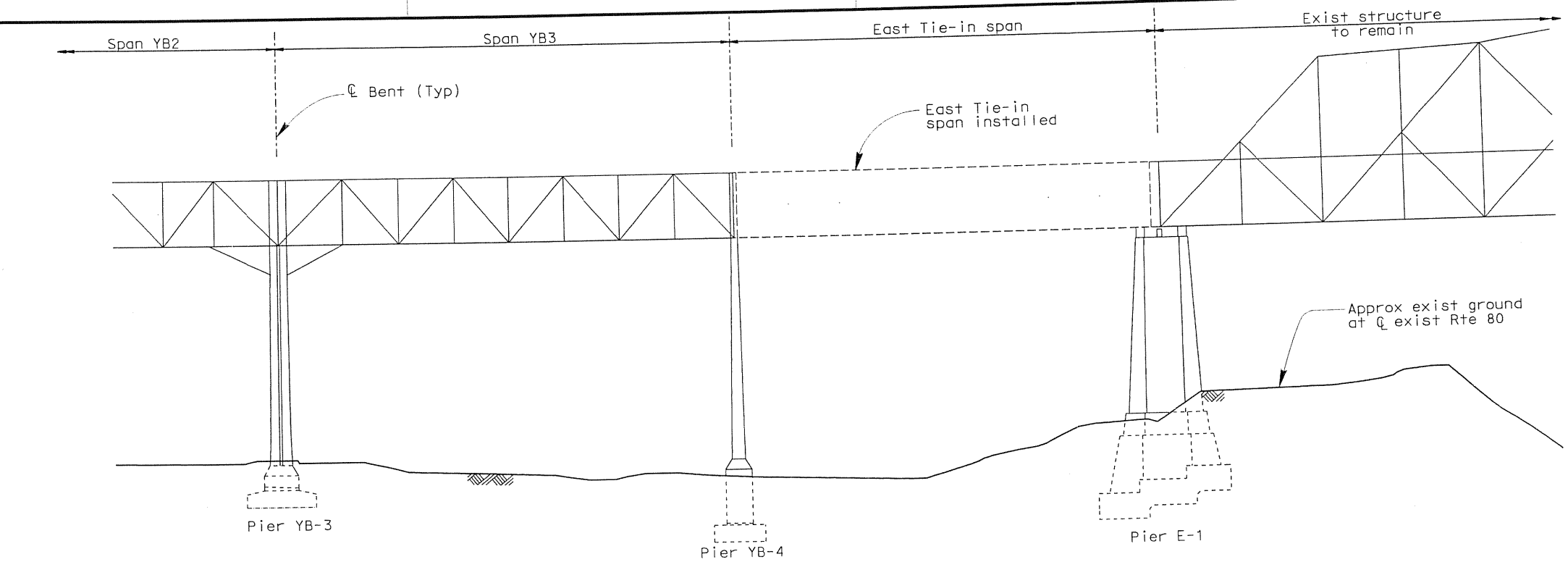

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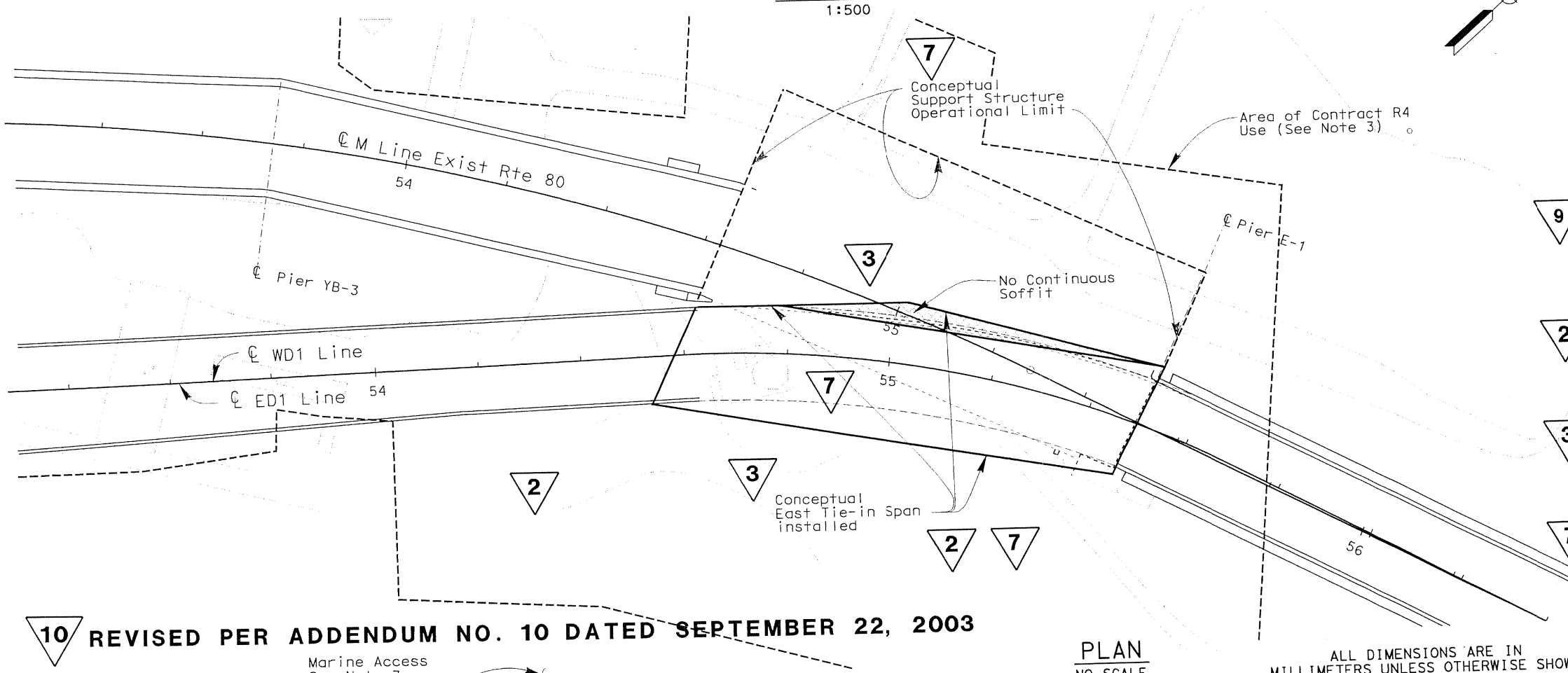

PLAN
NO SCALE

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

04	SF	80	12.6/13.2	151	193

Caltrans Metric

2-18-03
REGISTERED CIVIL ENGINEER

3-31-03
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JUAN A. MURILLO
No. C051722
Exp. 6-30-05
CIVIL
STATE OF CALIFORNIA

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NOTES:

1. General sequence of operations is shown. Contractor shall submit details of design, operation and sequence of operations, subject to review and approval.
2. All connections to existing Truss shall be bolted.
3. For contract limits, see "Construction Details" sheets on Road Plans. For TBS limits of substructure and superstructure, see "Construction Details Restrictions" sheet.
2 4. Supports used to construct and move-in the East Tie-In and to move-out the existing structure shall be removed.

LEGEND:

3 Area of overlap of conceptual E. Tie-in span installed and construction details restricted areas. Contractor shall not construct temporary bypass structure permanent supports in this area. (See note 3).

9 **REVISED PER ADDENDUM NO. 9 DATED SEPTEMBER 4, 2003**

2 **REVISED PER ADDENDUM NO. 2 DATED MAY 22, 2003**

3 **REVISED PER ADDENDUM NO. 3 DATED JUNE 6, 2003**

7 **REVISED PER ADDENDUM NO. 7 DATED AUGUST 4, 2003**

10 **REVISED PER ADDENDUM NO. 10 DATED SEPTEMBER 22, 2003**

DESIGN OVERSIGHT
SIGN OFF DATE

DESIGN	BY C. Subrizi	CHECKED R. Mutobe
DETAILS	BY G. Benkovich	CHECKED C. Subrizi
QUANTITIES	BY N/A	CHECKED N/A

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

David Williams
PROJECT ENGINEER

BRIDGE NO. 34-0006(TEMP)
KILOMETER POST 12.6

CU 04251
EA 0120R1

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

SAN FRANCISCO OAKLAND BAY BRIDGE
EAST SPAN SEISMIC SAFETY PROJECT

EAST TIE-IN
OPERATION SEQUENCE NO.3

REVISION DATES (PRELIMINARY STAGE ONLY): 3/21/03

SHEET OF

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Special Provisions References

Sections	Reference Page	Title of Special Provisions Section
Section 1	9	Specifications and Plans
Section 2-1.07	60	Submittal of Porposal Drawings
Section 3-1.01A	60 to 61	Pre-Award Meeting
Section 5-1.14	84 to 95	Contractor Design
Section 9	132	Description of Bridge Work
Section 10-1.15	168 to 170	Temporary Bypass Structure

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

Annexed to Contract No. 04-0120R4

SECTION 1. SPECIFICATIONS AND PLANS

The work embraced herein shall conform to the provisions in the Standard Specifications dated July 1999, and the Standard Plans dated July 1999, of the Department of Transportation insofar as the same may apply, and these special provisions.

This work shall consist of constructing the roadwork and utilities as shown on the plans.

This work shall also consist of designing and constructing the temporary bypass structure (TBS) complete in place, at the location shown on the plans. This work shall include, but not be limited to design and construction of foundations, substructures, temporary support structures, superstructure, bridge barriers, bridge deck drains system, and all appurtenant items and work necessary for the Contractor to transport materials to the work site and construct the TBS.

The TBS is shown schematically on the plans with the required design criteria to enable the Contractor to develop the design and complete the construction. The TBS, as shown on the plans, is divided into the following three bridge structure segments:

A. West Tie-In - to be constructed with multiple lane closures and staged construction, and requiring removal of portions of the existing Route 80 concrete viaduct (Bridge No. 34-0004).
B. Viaduct – to connect the West Tie-In and East Tie-In.
C. East Tie-In – to be constructed in stages with a short-term closure of the entire bridge. The design concept envisions construction to include erection of the East Tie-In adjacent to the existing Route 80 steel truss (Bridge No. 33-0025) span YB4, between Pier YB-4 and Pier E-1, rolling-out span YB4 onto temporary supports, and rolling the East Tie-In into place.

The bidder's attention is directed to Section 1-1.29, "Plans," of the Standard Specifications.

Project Plans are specific details, dimensions, and design criteria peculiar to the work and supplemented by the Standard Plans insofar as the same may apply.

Design Plans are to be prepared by the Contractor in conformance with design criteria as shown on the Project Plans and in accordance with the requirements of these special provisions. Design Plans as described in these special provisions shall become Contract Plans once authorized for construction by the Engineer.

The bidder's attention is directed to Section 4-1.01, "Intent of the Plans and Specifications," of the Standard Specifications.

When the plans contain design criteria for work to be performed, the Contractor shall perform all professional engineering design work, prepare the design plans, and prepare supplemental technical special provisions needed as required in these special provisions for the approval of the Engineer. All designs prepared by the Contractor shall comply with all design criteria requirements shown on the project plans and in these special provisions.

Any submission by the Contractor of designs, design plans, and supplemental technical special provisions prepared by the Contractor for Department review shall constitute an affirmation by the Contractor that the work detailed in the Contractor prepared design documents are complete, buildable by the Contractor, and compliant with the design criteria shown on the project plans and these special provisions and as directed in writing by the Engineer.

Upon completion of the TBS, the existing Route 80 steel truss spans, between Pier YB-1 and Pier YB-4 shall be removed.

If the Department determines that a prospective bidder is not qualified to submit a bid for this project, the prospective bidder may request, in writing, a Pre-Bid Qualifications Review Meeting to review the responses in the PBQQ and the Department's determination. Requests for Pre-Bid Qualifications Review Meetings must be submitted to the Department of Transportation, 1120 N Street, Room 0200, MS #26, Sacramento, California 95814 so that the request is received by the Department no later than 4:00 p.m. on the fourth day, not including Saturdays, Sundays and legal holidays, following receipt of the Department's determination. The Department's decision regarding the prospective bidder's qualification to bid shall be final.

2-1.04 PRE-AWARD INFORMATION/QUESTIONNAIRE

Qualified bidders, as determined under "Pre-Bid Qualifications Questionnaire," of these special provisions, shall submit, with their bid, responses to the "Pre-Award Information/Questionnaire" (PAIQ) included in the Proposal, and available as a material information handout in "Project Information," of these special provisions. In signing the signature page of the Proposal, the bidder certifies that the information and answers in response to the PAIQ are complete and accurate.
The bidder's attention is directed to "Pre-Award Meeting," of these special provisions for the requirements of acceptance of bid. The Department's acceptance of the responses to the PAIQ does not relieve bidders of the responsibility for furnishing materials or producing finished work of the quality specified in these special provisions and shown on the plans.

Along with the PAIQ, the bidder shall submit with the bid the Proposal Drawing submittal as described in "Contractor Design" of these special provisions.

2-1.05 ESCROW OF BID DOCUMENTATION

Bid documentation shall consist of all documentary and calculated information generated by the Contractor in preparation of the bid. The bid documentation shall conform to the requirements in these special provisions, and shall be submitted to the Department and held in escrow for the duration of the contract.

The escrowed bid documents will be the only documents accepted from the Contractor regarding preparation of the bid.

In signing the proposal, the bidder certifies that the material submitted for escrow constitutes all the documentary information used in preparation of the bid and that he has personally examined the contents of the container and that they are complete.

Nothing in the bid documentation shall be construed to change or modify the terms or conditions of the contract.

Escrowed bid documentation will not be used for pre-award evaluation of the Contractor's anticipated methods of construction, nor to assess the Contractor's qualifications for performing the work.

Bid documentation shall clearly itemize the Contractor's estimated costs of performing the work. The documentation submitted shall be complete and so detailed as to allow for an in-depth analysis of the Contractor's estimate.

---------- End of Page 55 in the original Special Provisions ----------

The bid documentation shall include, but not be limited to: quantity takeoffs; rate schedules for the direct costs and the time- and nontime-related indirect costs for labor (by craft), plant and equipment ownership and operation, permanent and expendable materials, insurance and subcontracted work; estimated construction schedules, including sequence and duration and development of production rates; quotations, scoping documents and subcontracts related to subcontractors, manufacturers and suppliers; estimates of field and home office overhead; contingency and margin for each contract item of work; names of the persons responsible for preparing the bidder's estimate, and other reports, calculations, assumptions and information used by the bidder to arrive at the estimate submitted with the proposal.

The Contractor shall also submit bid documentation for each subcontractor, manufacturer and supplier whose total subcontract or purchase orders exceeds or is expected to exceed $250,000. Subcontractor, manufacturer and supplier bid documentation shall be enclosed with the Contractor's submittal, regardless of whether or not subcontracts or purchase orders have been executed or entered into on the date that bid documentation is submitted for escrow. If at the time that bid documentation is submitted for escrow, the subcontractor, manufacturer or supplier does not have a executed subcontract or purchase orders, and a subcontract or purchase orders is subsequently executed, then a copy of the executed subcontract or purchase orders shall be submitted into escrow within 14 days of the execution of the respective subcontract or purchase orders. The examination of subcontractors', manufacturers' and suppliers' bid documentation will be accomplished in the same manner as for the Contractor's bid documentation. If a subcontractor, manufacturer or supplier is replaced, bid documentation for the new subcontractor, manufacturer or supplier shall be submitted for review and escrow before authorization for the substitution will be granted. Upon request of a subcontractor, manufacturer or supplier, the bid documentation from that subcontractor, manufacturer or supplier shall be reviewed only by the subcontractor, manufacturer or supplier and the Department.

If the bidder is a joint venture, the bid documentation shall include the joint venture agreement, the joint venture estimate comparison and final reconciliation of the joint venture estimate.

Copies of the proposals submitted by the first, second and third low bidders will be provided to the respective bidders for inclusion in the bid documentation to be escrowed.

The first, second, and third apparent low bidders shall present the bid documentation for escrow at the District 04 Office, 111 Grand Avenue, Oakland, CA, (510) 286-5209, on the first Tuesday between 1:00 p.m. and 2:00 p.m., following the time indicated in the "Notice to Contractors" for the opening of bids. The fourth and subsequent apparent low bidders shall present the bid documentation for escrow if requested by the Department to do so.

Bid documentation shall be submitted as a paper copy in a sealed container, clearly marked with the bidder's name, date of submittal, project contract number and the words, "Bid Documentation for Escrow."

Failure to submit the actual and complete bid documentation as specified herein within the time specified shall be cause for rejection of the proposal.

Upon submittal, the bid documentation of the apparent low bidder will be examined and inventoried by the duly designated representatives of the Contractor and the Department to ensure that the bid documentation is authentic, legible, and in accordance with the terms of this section "Escrow of Bid Documentation." The examination will not include review of, nor will it constitute approval of, proposed construction methods, estimating assumptions or interpretation of the contract. The examination will not alter any conditions or terms of the contract. The acceptance or rejection by the Department that the submitted bid documents are in compliance with this section "Escrow of Bid Documentation" shall be completed within 48 hours of the time the bid documentation is submitted by the Contractor.

At the completion of the examination, the bid documents will be sealed and jointly deposited at an agreed commercial business in Oakland, CA.

Bid documentation submitted by the second and third apparent low bidders will be jointly deposited at agreed commercial businesses. If the apparent low bid is withdrawn or rejected, the bid documentation of the second low bidder will be examined and inventoried in the manner specified above, then sealed and deposited again in escrow. If the second low bid is withdrawn or rejected, the bid documentation of the third low bidder will be examined and inventoried in the manner specified above, then sealed and deposited again in escrow. Bid documentation from subsequent bidders, if requested, will be examined and inventoried in the same manner as specified above, then sealed and deposited in escrow. Upon execution and final approval of the contract or rejection of all bids, the bid documentation will be returned to any remaining unsuccessful bidders.

Any and all components of the escrowed bid documentation may be examined by the designated representatives of both the Department and the Contractor, at any time deemed necessary by either the Department or the Contractor to assist in the negotiation of price adjustments and change orders, or to assist in the potential resolution or in the settlement of claims or disputes. Such a joint review shall be performed within 15 days of receipt of a written request to do so by either party. If the Contractor refuses to participate in the joint examination of any and all components of the escrowed bid documentation as provided herein, such refusal shall be considered as a failure by the Contractor to exhaust administrative claim remedies with respect to the particular protest, notice of potential claim, or claim. In addition, this refusal by the Contractor shall constitute

---------- End of Page 56 in the original Special Provisions ----------

a bar to future arbitration with respect to the protest, potential claim or claim as provided by Section 10240.2 of the California Public Contract Code.

If requested by a Disputes Review Board, the escrowed bid documentation may be utilized to assist the Board in its recommendations.

The bid documentation submitted by the Contractor will be held in escrow until the contract has been completed, the ultimate resolution of all disputes and claims has been achieved and receipt of final payment has been accepted by the Contractor. The escrowed bid documentation will then be released from escrow to the Contractor.

The bid documentation submitted by the bidder is, and shall remain, the property of the bidder, and is subject to only joint review by the Department and the bidder. The Department stipulates and expressly acknowledges that the submitted bid documentation constitutes trade secrets and will not be deemed public records. This acknowledgment is based on the Department's express understanding that the information contained in the bid documentation is not known outside the bidder's business, is known only to a limited extent and only by a limited number of employees of the bidder, is safeguarded while in the bidder's possession, is extremely valuable to the bidder and could be extremely valuable to the bidder's competitors by virtue of it reflecting the bidder's contemplated techniques of construction. The Department acknowledges that the bid documentation includes a compilation of information used in the bidder's business, intended to give the bidder an opportunity to obtain an advantage over competitors who do not know of or use the contents of the documentation. The Department agrees to safeguard the bid documentation, and all information contained therein, against disclosure, including disclosure of

subcontractor bid documentation to the Contractor and other subcontractors to the fullest extent permitted by law. However, in the event of arbitration or litigation, the bid documentation shall be subject to discovery, and the Department assumes no responsibility for safeguarding the bid documentation unless the Contractor has obtained an appropriate protective order issued by the arbitrator or the court.

Full compensation for preparing the bid documentation, presenting it for escrow and reviewing it for escrow and upon request of the Engineer shall be considered as included in the contract prices paid for the various items of work, and no additional compensation will be allowed therefor.

The direct cost of depositing the bid documentation in escrow at the agreed commercial business will be paid by the State.

2-1.06 BIDDER COMPENSATION

The Department recognizes the cost required to prepare bids for a project of this magnitude. To encourage competitive bids, within 90 days of award of the contract, the second and third bidders shall each receive $500,000 to defray a portion of the costs of providing a responsive bid.

Bidders whose bids are determined by the Department to be non-responsive or fail to execute the contract will not be eligible for bidder compensation.

Within 30 days of award of the contract, the Department will notify the Contractor of the identity of the recipients of the bidder compensation. The Contractor shall then make the necessary arrangements with the recipients in order to administer and pass-through the payment and provide proof of receipt to the Department in accordance with the payment provisions of Section 9-1.03B, "Work Performed by Special Forces or Other Special Services," of the Standard Specifications.

The Contractor shall be compensated for paying bidder compensation to the second and third low bidders in conformance with the provisions of Section 9-1.03B, "Work Performed by Special Forces or Other Special Services," of the Standard Specifications, except that 5 percent, in lieu of 15 percent, will be added to the invoice price. No additional mark ups will be allowed.

No separate payment will be made for the costs of providing a complete, responsible, and competitive bid in addition to that specified in this section "Bidders Compensation." Other unsuccessful bidders will not be compensated for their bids. If the Department rejects all bids and cancels the solicitation, no bidder will be provided compensation.

2-1.07 SUBMITTAL OF PROPOSAL DRAWINGS

Attention is directed to "Contractor Design" of these special provisions regarding proposal drawings, which shall be submitted with the bid. It is understood that the proposal drawings at bid time are preliminary conceptual versions subject to change, however, the drawings shall be as complete and comprehensive as possible to demonstrate a clear plan for construction. Review of the proposal drawings will be to assess the responsibility of the Contractor, and does not relieve the Contractor from conforming to plans and specifications.

The contract provisions in this section shall be considered part of the cost of preparing bids and no separate payment will be made therefor.

PREBID CONCEPTUAL DRAWING REVIEW is deleted per addendum #8

SECTION 3. PRE-AWARD MEETING AND AWARD AND EXECUTION OF CONTRACT

3-1.01 GENERAL

---------- End of Page 57 in the original Special Provisions ----------

The bidder's attention is directed to the provisions in Section 3, "Award and Execution of Contract," of the Standard Specifications and these special provisions for the requirements and conditions concerning the pre-award meeting and the award and execution of contract.

3-1.01A PRE-AWARD MEETING

The Engineer will review the responses to the "Pre-Award Information/Questionnaire" (PAIQ) and the Proposal Drawings submitted by the apparent low bidder. If the Engineer determines it necessary, a pre-award qualifications review meeting will be conducted. The meeting, if held, will be on **December 10, 2003 at 1:00 p.m. in the third floor conference room, 1727 - 30th Street, Sacramento, CA 95816.** The apparent low bidder shall participate in the Pre-award Meeting conducted by one or more agents of the Director and the Engineer. Non-attendance to the qualification review meeting by the apparent low bidder shall be just cause for rejection of the bid and forfeiture of the proposal guaranty.

At the Pre-award Meeting, the prospective bidder shall be prepared to discuss and answer questions relative to the responses to PAIQ and the concept drawing design submittal submitted with the bid. Based on the bidder's experience and safety history, conceptual approach to the design, construction, and removal work, logistics, and schedule as presented in the PAIQ, the Proposal Drawings, and on any information provided at the Pre-Award Meeting, the Department will make a determination on the bidder's qualifications for performing the work in a manner that is safe for the workers and the public.

Experience in design and construction of bridges is highly desirable and will be an important factor in determining the Contractor's qualifications to perform the project. It is highly recommended that the Contractor's authorized representative has experience with the responsibilities designated in Section 5-1.06, "Superintendence," of the Standard Specifications. Such experience in construction work of the bridge design type selected by the Contractor is highly desirable and will also be an important factor in determining the Contractor's qualifications to perform the project.

The experience and qualifications of the Contractor's authorized representative, whether originally designated or as replaced by a subsequent designee during performance of the contract, will be subject to review by the Department in conformance with the provisions as specified in "Pre-Award Information/Questionnaire," of these special provisions. Upon request by the Engineer, the Contractor shall provide the same information regarding any subsequent authorized representative as required to be provided for the original authorized representative as set forth in the PAIQ in the Proposal.

Successful completion of the pre-award qualifications process does not relieve the Contractor of the responsibility for furnishing materials or producing finished work of the quality specified in project plans and specifications, including the project plans and specifications authorized by the Engineer.

The second and third apparent low bidders shall participate in the Pre-award Meeting if requested to do so by the Department. Notification by the Department will be within 7 days after the bid opening, and will be provided at least 48 hours prior to the qualifications review meeting. Non-attendance by the second or third apparent low bidder at any such requested meeting shall be just cause for rejection of bid and forfeiture of the proposal guaranty.

3-1.01B AWARD AND EXECUTION OF CONTRACT

Bids will be compared on the basis of the Engineer's Estimate of the quantities of work to be done and the number of working days bid for completion of the work. The award of the contract, if it be awarded, will be made within 30 days after the opening of the proposals if the apparent lowest bidder has met the goal for DBE participation. The award of the contract, if it be awarded, will be made within 60 days after the opening of the proposals if the apparent lowest bidder has not met the goal for DBE participation but has claimed good faith efforts to do so. These periods will be subject to extension for such further periods as may be agreed upon in writing between the Department and the bidders concerned. The award, if made, will be to the lowest responsible bidder whose proposal complies with all the requirements prescribed and who has met the goal for DBE participation or has demonstrated, to the satisfaction of the Department, adequate good faith efforts to do so. Meeting the goal for DBE participation or demonstrating, to the satisfaction of the Department, adequate good faith efforts to do so is a condition for being eligible for award of contract. The lowest bid will be determined on the basis of the "Total Basis for Comparison of Bids (A+B)" set forth in the proposal. The contract price for the awarded contract will be the "Total Bid (A)" set forth in the proposal.

---------- End of Page 58 in the original Special Provisions ----------

Bids in which the number of working days bid for completion of the work exceed 1100 calendar days will be considered non-responsive and will be rejected.

The contract shall be executed by the successful bidder and shall be returned, together with the contract bonds, to the Department so that it is received within 10 days, not including Saturdays, Sundays and legal holidays, after the bidder has received the contract for execution. Failure to do so shall be just cause for forfeiture of the proposal guaranty. The executed contract documents shall be delivered to the following address: Department of Transportation MS 43, Attn: Office Engineer, 1727 30th Street, Sacramento, CA 95816.

A "Payee Data Record" form will be included in the contract documents to be executed by the successful bidder. The purpose of the form is to facilitate the collection of taxpayer identification data. The form shall be completed and returned to the Department by the successful bidder with the executed contract and contract bonds. For the purposes of the form, payee shall be deemed to mean the successful bidder. The form is not to be completed for subcontractors or suppliers. Failure to complete and return the "Payee Data Record" form to the Department as provided herein will result in the retention of 31 percent of payments due the contractor and penalties of up to $20,000. This retention of payments for failure to complete the "Payee Data Record" form is in addition to any other retention of payments due the Contractor.

SECTION 4. BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES

Attention is directed to the provisions in Section 8-1.03, "Beginning of Work," in Section 8-1.06, "Time of Completion," and in Section 8-1.07, "Liquidated Damages," of the Standard Specifications and these special provisions.

The Contractor shall begin work within 15 calendar days after the contract has been approved by the Attorney General or the attorney appointed and authorized to represent the Department of Transportation.

A working day as defined in said Section 8-1.06 is re-defined for this project. Paragraph 2 through paragraph 5, inclusive, of said Section 8-1.06 shall not apply. Saturdays, Sundays and legal holidays, including days of inclement weather, will be counted as working days.

The work shall be diligently prosecuted to completion before the expiration of **the NUMBER OF WORKING DAYS BID** beginning on the fifteenth calendar day after approval of the contract.

Attention is directed to "Areas for Contractor's Use," "Order of Work," and "Cooperation," of these special provisions. The Contractor shall pay to the State of California the sum of $16,000 per day, for each and every calendar day's delay in finishing the work after expiration of the number of working days bid.

6th and 7th paragraphs are deleted per Addendum # 11

SECTION 5. GENERAL

SECTION 5-1. MISCELLANEOUS

5-1.01 WORKING DRAWINGS

Working drawings shall conform to the requirements in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications and these special provisions. Working drawings shall include supplements and calculations that are in addition to drawings.

Working drawings shall be submitted to the following location:

California Department of Transportation
Office of the Resident Engineer, Contract 04-0120R4
280 Beale Street
San Francisco, CA 94105

Working drawings shall conform to the following:

A. For initial review, 6 sets of the working drawings, shall be submitted. After the Engineer has determined that a submittal is complete, 12 additional sets shall be submitted.

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B. Drawings shall be 559 mm x 864 mm or 279 mm x 432 mm in size. Supplements and calculations shall be 216 mm x 280 mm in size.
C. For drawings, text size shall be nominally 2.8 mm high, minimum. For supplement and calculations, font size shall be 12, minimum.
D. Each working drawing sheet and each page of supplement or calculation, shall include the jobsite name of the structure as shown on the contract plans, District-County-Route-Kilometer Post, bridge number and contract number.
E. Text and details shall be legible and suitable for photocopying and reduction.
F. In addition to the paper copies of the working drawings, electronic files shall be submitted. Electronic files shall be portable document format (PDF) and shall be submitted on compact disk (CD) media. Each plan sheet shall be a separate PDF file on the CD. The electronic copy of the calculations and supplement shall be made into separate PDF files so that no more than 50 pages are included in a single file on the CD. The CD shall contain an index consisting of the file names and a description of the corresponding file contents. The files shall be listed in the sequence of: 1) index, 2) drawings, 3) supplement, and 4) calculations. If more than one CD is used for a given working drawing submittal, the index shall be included on each CD.
G. Microfilms are required for approved shop drawings and shall be only a 24x reduction. The edge of the corrected original tracing image shall be clearly visible and visually parallel with the edges of the page. A clear, legible symbol shall be provided on the upper left side of each page to show the amount of reduction, and a horizontal and vertical scale shall be provided on each reduced print to facilitate enlargement to original scale.

c. Underwater Debris
d. SFOBB East Span Survey Info
e. Private Aid to Navigation Sample Form
f. Geotechnical & Material Report for YBI
g. YBI Site Investigation Report
h- Project Special Forms 100 through 400
i- Construction Vibration Monitoring Field Data Form
j- Confidentiality Agreement Form
k- Proposed SFOBB East Span alignment (Microstation files)

1. Utility plan sheets for YBI South-South Detour (Microstation files)
2. eb_detour.dgn: This is a Micro Station alignment file for EB detour of SFOBB East span (EB I-80) with roadway layout.
3. wb_detour.dgn: This is a Micro Station alignment file for WB detour of SFOBB East Span (WB I-80) with roadway layout.
4. n6_sfobb.dgn: This is a Micro Station alignment file for the new SFOBB East Span with roadway layout for WB & EB I-80. The portion of roadway layout for EB-I80 from YBI Tunnel Portal Station EB 54+20 and new ramps are included in a separate file (n6_sfobb_eb.dgn) for clarity because of double deck structure over that section.
5. n6_sfobb_eb.dgn: This is a Micro Station alignment file for the new SFOBB East Span with the portion of roadway layout for EB I-80 from YBI Tunnel Portal Station EB 54+20 and new ramps.

MATERIALS INFORMATION AVAILABLE FOR INSPECTION

Items available for inspection, upon written request, at the office of the Duty Senior at the District 4 Office, 111 Grand Avenue, Oakland, CA 94612, email: duty_senior_district04@dot.ca.gov, telephone (510) 286-5209 are as follows:

1. Final Environmental Impact Statement/California Environmental Quality Act (CEQA) Statutory Exemption and Record of Decision;
2. BCDC Permit Application and permit;
3. Application for Water Quality Certification from the RWQCB;
4. RWQCB 401 Certification;
5. Waste Discharge Requirements from the RWQCB;

5b. Order No. 01-100, NPDES General Permit No. CAG912002 from SFRWQCB;

6. ACOE 404 Permit Application and Permit;
7. USCG Permit Application and Permit;
8. Caltrans letters to the Dredged Material Management Office with draft disposal plan;

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9. USFWS Biological Opinion for brown pelicans and least terns;
10. CDFG 2081 Incidental Take Statement;
11. As-built plans of the existing San Francisco-Oakland Bay Bridge;
12. Soil samples and rock cores.

5-1.14 CONTRACTOR DESIGN

This work shall consist of designing and providing detailed design plans, supplemental technical special provisions and quantities of various items of work for the construction of the Temporary Bypass Structure, including all appurtenances required for bridge mounted utilities, deck drainage system, and signs, at locations shown on the plans and as specified in "Temporary Bypass Structure," elsewhere in these special provisions, and in these special provisions.

The Temporary Bypass Structure shall be designed in accordance with the design criteria as shown on the plans, and as specified in these special provisions. Engineering design and calculations, and independent design check calculations shall be submitted to the Engineer for review and acceptance.

Detailed design plans, supplemental technical special provisions and associated quantities of items of work shall be submitted to the Engineer for acceptance and authorization for construction.

Engineering design and calculations for the Temporary Bypass Structure and all associated detailed design plans, supplemental technical special provisions and quantities of items of work shall be signed by an Engineer who is registered as a Civil Engineer in the State of California.

Independent design check calculations for the Temporary Bypass Structure and all associated detailed design plans and quantities of items of work shall be signed by another Engineer who is registered as a Civil Engineer in the State of California.

Two of the Contractor's representative shall be designated as "Design Manager" and "Contractor's Engineer." Design Manager and Contractor's Engineer shall conform to the following:

DESIGN MANAGER

The Design Manager shall be an engineer who is registered as a Civil Engineer in the State of California, and shall have a minimum of ten years of experience in designing bridges of the type proposed by the Contractor and have managed at least one design project comparable in size, difficulty and cost. Proof of the registration and the required experience shall be submitted by the Contractor within 5 days after receiving notice that the contract has been approved.

The Design Manager shall:

1. Be responsible for the Contractor's design quality control and quality assurance (QC/QA) plan and the quality of the Contractor designs,
2. Verify design compliance with the requirements of the plans and these special provisions,
3. Coordinate the design submittal schedule with the Engineer,
4. Coordinate the Contractor responses to design comments issued by the Engineer, and
5. Ensure that design documents and records are kept in compliance with the requirements of these special provisions.

CONTRACTOR'S ENGINEER

The Contractor's Engineer, who is registered as a Civil Engineer in the State of California, shall be the engineer of record who will be responsible for producing, stamping and signing all of the Engineering design calculations for the Temporary Bypass Structure (TBS) and all associated detailed design plans, supplemental technical special provisions and quantities of items of work.

The Contractor's Engineer shall certify in writing that the TBS is constructed in conformance with the authorized detailed design plans and supplemental technical special provisions.

When meetings are to be held between the Contractor's Engineer and the Department's representatives to address "Contractor Design" matters, the meeting shall be at one of the following locations:

1- SFOBB Construction Offices, 333 Burma Road, Oakland, CA 94607
2- Department Of Transportation, 1801 30th Street, Sacramento, CA 95816

PROPOSAL DRAWING SUBMITTAL

The Contractor shall prepare and submit proposal drawings in accordance with the requirements of these special provisions. Proposal drawings are drawings, which shall be submitted by all bidders with the bid. Ten sets shall be submitted. Proposal drawings shall:

1. Contain a drawing index with drawing numbers and drawing titles
2. Be in metric units
3. Comply with the following manuals of the Department:

    a. Plans Preparation Manual
    b. Bridge Design Aids Manual
    c. Bridge Design Details Manual
    d. Bridge Memo to Designers Manual
    e. Information and Procedures Guide of the Office of Special Funded Projects

4. Be of sufficient detail to depict the TBS segments, elements, and components, as defined in "Temporary Bypass Structure," elsewhere in these special provisions, in plan and elevation, and show at the minimum:

a. Bridge geometry
b. Each bent in section labeled with a station
c. The obstruction free clearance at the point of minimum vertical clearance, and traffic opening width
d. Each foundation location and type labeled with station
e. Locations and types of joints, both expansion and construction
f. Locations and types of bearings
g. The arrangement and material type and size of each structural member to demonstrate load paths from the superstructure to the ground through the substructure and foundation
h. Locations and type of components to be designed for ductile behavior
i. Locations and type of components to be capacity protected
j. Fundamental periods of vibration for each segment

5. Include a Type Selection Memo by segment in conformance with the requirements in Chapter 1-29 of the Bridge Memo to Designers Manual
6. Include a structure construction sequencing plan

DESIGN QC/QA PLAN

The Contractor shall prepare and submit a design QC/QA plan in accordance with the requirements of these special provisions. The design QC/QA plan shall address, as a minimum, the items described in "Quality Control" in these special provisions.

The design QC/QA plan shall include the following:

A. Method to be employed by the Contractor to track design tasks, design submittals, approvals, and re-submittals.
B. Reference section of the Standard Specifications, these special provisions, design criteria, or other design document required or referenced in the production of each design submittal.
C. A time-scaled logic diagram, which shows the schedule of all design activities and associated design submittals, and demonstrates any interdependency between separate submittals.
D. Allowable time for review of the submittal by the Engineer as specified in the Standard Specifications and these special provisions.
E. In the event that several related submittals with review times on the controlling/critical path are submitted simultaneously, or an additional submittal is submitted for review before the review of a previous submittal has been completed, the Contractor shall designate the sequence in which the submittals are to be reviewed.
F. Identification of the first occurrence of any controlling/critical path operation affected by each submittal and a contingency plan describing how the designer will address any required redesign of any submittals previously authorized for construction.

Within 5 days after receiving notice that the contract has been approved, as specified in Section 8-1.03, "Beginning of Work," of the Standard Specifications, the Contractor shall submit to the Engineer, for review and approval, the design QC/QA plan in conjunction with the Baseline Schedule. The Engineer shall be allowed 10 days to review the QC/QA plan and to provide comments. All comments are to be implemented into the QC/QA plan. Re-submittal of the QC/QA plan is not required. No contract payments shall be made to the Contractor until a QC/QA plan is submitted in accordance with the above requirements. Attention is directed to the "Progress Schedule (Critical Path Method)" elsewhere in these special provisions for the definitions of Baseline Schedule and Controlling Operation.

DESIGN

Attention is directed to "Project Information," of these special provisions regarding the materials information handout for foundation and design information.

Designing the TBS and the preparation of detailed design plans, production of supplemental technical special provisions, and quantities calculations shall be in conformance with these special provisions and the following:

1. Plans Preparation Manual of the Department
2. Bridge Design Aids Manual of the Department
3. Bridge Design Details Manual of the Department
4. Bridge Memo to Designers Manual of the Department

5. Plans, Specifications and Estimates Guide of the Department
6. Information and Procedures Guide of the Office of Special Funded Projects of the Department
7. Current Electrical and Mechanical codes
8. Current 1999 Standard Special Provisions and Bridge Reference Specifications of the Department
9. July 1999 Standard Specifications of the Department
10. July 1999 Standard Plans of the Department
11. Policy on High and Low Risk Underground Facilities within Highway Rights of Way of the Department

The approach slab, where shown on the plans, shall be included in the Contractor's design of the TBS.

It is expected that temporary excavation shoring will be required to support existing facilities, foundations, and embankments during the various stages of construction. Unless specified otherwise, temporary excavation shoring shall conform to the requirements of Sections 7-1.09, "Public Safety," and 19-1.02, "Preservation of Property," of the Standard Specifications.

The Contractor shall prepare working drawings detailing the temporary excavation shoring in accordance with Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. All working drawings for temporary excavation shoring shall be signed by an engineer who is registered as a Civil Engineer in the State of California. The temporary excavation shoring shall be approved by the Engineer prior to construction.

Temporary shoring of the types designated as Important Construction in the design criteria shown on the plans, shall be designed to conform to the requirements of said design criteria. Design submittals for such temporary shoring shall conform to the requirements in these special provisions.

Full compensation for furnishing, installing and removing temporary excavation shoring shall be considered as included in the contract prices paid for the various items of earthwork involved and no additional compensation will be allowed therefor.

Expansion joints connecting TBS superstructure segments shall be included in the Contractor's design of the west tie-in superstructure or east tie-in superstructure. Expansion joints shall be modular type. Modular expansion joints having designs where movable components are metal on metal will not be permitted. The expansion joint locations shown on the plans are approximate and are intended to delineate the TBS superstructure segments. The Contractor's design may include additional expansion joints within the viaduct and east tie-in segments provided that the resulting TBS design conforms with the requirements of the design criteria shown on the plans, and the requirements under "Relations with the U.S. Coast Guard" and "Sound Control Requirements," of these special provisions.

Where steel forms are proposed for concrete deck construction for the Viaduct segment, the design shall either accommodate removal of steel forms after completion of the deck, or provide for application of an acoustic insulating material to the underside of the deck that is approved by the Engineer.

The Contractor's planned locations for permanent TBS foundations shall not interfere with the planned future foundation construction shown on the plans. The Contractor's designs for permanent TBS foundations shall accommodate future removal to 0.3 meter below existing ground or 1 meter below the finished grade, whichever is lower.

All permanent supporting elements of the TBS shall be designed to conform to the Department's standards for a permanent highway structure and these special provisions. Permanent supporting elements of the TBS shall not contain structural components that are traditionally acceptable for the construction of temporary structures used to facilitate construction, such as falsework or temporary supports. Structural elements such as timber foundations, timber posts and beams, timber bracing, cables, and the like will not be permitted as part of the permanent supporting elements of the TBS.

GEOTECHNICAL INVESTIGATION

The foundation design shall conform to the design criteria as shown on the plans, and as supplemented by the following foundation information provided in the information handout:

1. "Geotechnical Foundation Report for YBI Approach and Self-Anchored Suspension Bridge," June 2002 by Fugro-Earth Mechanics, Joint Venture
2. "Final Yerba Buena Island Geotechnical Site Characterization Report, San Francisco Oakland Bay Bridge East Span Seismic Safety Project," December 2001 by Fugro-Earth Mechanics, Joint Venture
3. "Additional Information for Pile Foundations Yerba Buena Island Temporary Bypass Structure (TBS) Design-Build SFOBB East Span Seismic Safety Project," July 18, 2003, by Fugro-Earth Mechanics, Joint Venture

The available foundation information is not considered to be sufficient to facilitate the design of all required TBS foundations. At the Contractor's expense, the Contractor shall conduct additional foundation investigations to facilitate the design of all TBS foundations in areas where the foundation information is insufficient. Such investigations shall conform to the provisions in Section 49-1.03, "Determination of Length," of the Standard Specifications.

The Contractor shall prepare and submit a Foundation Report for all proposed TBS foundation designs, regardless of whether they are based on the information contained in the information handout or result from investigations conducted by the Contractor. The Foundation Report shall be prepared in conformance with the requirements in the Information and Procedures Guide of the Office of Special Funded Projects of the Department and shall be signed by an engineer who is registered as a Geotechnical Engineer in the State of California. This same engineer shall certify in writing that the TBS foundations are constructed in conformance with the Foundation Report. For foundation designs based on the information contained in the information handout, the Foundation Report shall be a certification by the Contractor's registered Geotechnical Engineer, that the information is adequate for the design, and no further investigation is required.

Due to the steep gradients of the restricted slope area designated on the plans, only geological site reconnaissance has been conducted. The available foundation information provides some information on the soil and rock conditions and groundwater levels interpolated from areas surrounding the slopes. Geotechnical investigation information adequate for foundation design on the restricted slope area is not available. If the Contractor decides to place any on the restricted slope area, the Contractor's Geotechnical Engineer shall conduct geotechnical site investigations to verify local soil and groundwater conditions in this area, and to obtain necessary input parameters for design for the foundations and evaluation of slope stability, and prepare an accompanying Foundation Report. The geotechnical site investigations and Foundation Report shall conform to these special provisions.

If the Contractor decides to place permanent TBS foundations on the restricted slope, the Contractor's Geotechnical Engineer shall either develop new response spectra for the structures on the slope, or validate that the Design Evaluation Earthquake (DEE) defined in the design criteria shown on the plans, is applicable for structures on the slope. Any new response spectra developed for structures on the slope shall have the same return period as the DEE. Documentation prepared by the Contractor's Geotechnical Engineer in developing either the new response spectra or validation of the use of the DEE, shall be submitted with the Foundation Report.

The Contractor's Geotechnical Engineer shall develop foundation designs and mitigation measures against potential slope failure initiated by external loading from these foundations and construction activities on the slope. The Contractor shall submit to the Engineer for approval a design report addressing slope stability. This report shall include, but not be limited to, the method of analysis with narrative, input parameters used, design calculations, results, mitigation measures against potential slope failure and conclusions. For the design procedures and requirements for the slope stability evaluation, consult the following reference:

1. Caltrans 2002, Guideline for Foundation Investigations and Reports (Caltrans 2000 Guidelines) - (Version 1.2, June 2002)
   (http://www.dot.ca.gov/hq/esc/geotech/request.htm#fg)

The Contractor's Geotechnical Engineer shall prepare and submit a report, including relevant calculations, showing that slope stability has been checked against a static factor of safety of 1.3 for all stages of construction. Such stages of construction shall include foundation investigations, construction of foundations, and removal of foundations. Two copies of the report shall be submitted to the Engineer.

The use of spread footings on the slope will require prior stabilization of the upper 2 meters of existing surface soils. Spread footings shall have a horizontal setback of 1.2 meters from the slope face. Any slope modification requires prior slope preparation and installation of a protective catchment system to maintain full-time access to the existing USCG facilities. The protective catchment system shall be submitted to the Engineer for approval. All earthwork shall conform with the requirements in Section 19, "Earthwork," of the Standard Specifications.

The slope shall be monitored during construction of the TBS to check for any slope displacement within 200 meters of either side of the TBS. The Contractor shall perform an initial topographic survey as part of the displacement monitoring system to record the location of the existing slope prior to the commencement of any work. Two copies of the survey shall be signed by an engineer, who is registered as a Civil Engineer in the State of California, and submitted to the Engineer.

Vandal-resistant displacement monitoring equipment shall be provided and maintained. Vertical and horizontal displacements of the slope shall be monitored continuously and shall be accurately measured and recorded at least weekly during construction of the TBS. The records of vertical and horizontal displacement shall be signed by an engineer who is registered as a Civil Engineer in the State of California.

After completion of construction of the TBS, all temporary foundations constructed to facilitate construction of the TBS on the restricted slope area, shall be removed as follows:

1. At the locations of future permanent foundations, where shown on the plans, foundations shall be completely removed.
2 At all other locations, foundations shall be removed 0.3 meter below existing ground or 1 meter below the finished grade, whichever is lower.

After removal of any temporary foundations placed on the slope to facilitate construction of the TBS, all modified slopes, within 200 meters to either side of the TBS, including excavations required to remove foundation components, shall be restored to a condition that is stable under both static and future earthquake loading. The finished slope shall be designed for a static factor of safety of 1.3 and a pseudo-static factor safety of 1.1, as specified in Caltrans 2002 Guidelines. For the pseudo-static analysis, a seismic coefficient equal to 1/3 of the peak ground acceleration shown on the design criteria may be used, but the peak ground acceleration shall not be greater than 0.2g, as specified in Caltrans 2002 Guidelines. The Contractor's Geotechnical Engineer shall prepare and submit a report, including relevant calculations, showing that the finished slope meets these requirements. Two copies of the report shall be submitted to the Engineer.

The final slope shall include protective measures for surficial ground stability and erosion control. Such measures shall conform to the various Erosion Control requirements specified elsewhere in these special provisions, and shall be submitted to the Engineer for approval.

DESIGN SUBMITTALS

The Contractor shall prepare and submit the following Design Submittals to the Engineer for acceptance and authorization of construction:

Preliminary Design Submittal
Final Design Submittal
Construction Submittal

The term "acceptance" shall mean that the design submittal has been received, that it includes all of the required contents defined in these special provisions for the particular design submittal, and that there is sufficient information, as determined by the Engineer, to properly evaluate the submittal.

The term "authorized for construction" shall mean that the design submittal includes all of the required contents defined in these special provisions for the particular design submittal, including clearly meeting the constraints of the design criteria shown on the plans, satisfactorily addresses design review comments provided by the Engineer, and that there is sufficient information, as determined by the Engineer, to inspect resulting fabrication and construction.

Design submittals shall be submitted as specified under the heading "Design Submittal Review" of these special provisions. The contents of each Design Submittal shall be of sufficient detail to depict the TBS segments, elements, and components, as defined in "Temporary Bypass Structure," elsewhere in these special provisions, and shall conform to the following:

Preliminary Design Submittal

Preliminary design submittal shall consist of the following:

1. Preliminary design information package
2. Detailed preliminary design drawings
3. Draft supplemental technical special provisions

Preliminary design information package shall, as a minimum, include the following:

1. A statement describing any modifications to or deviations from the information submitted with the proposal drawing submittal
2. Expected expansion joint movements
3. Preliminary loading and linear elastic response spectra force and displacement results (i.e. axial, moment, shear) on all primary components due to design loads conforming to the design criteria shown on the plans
4. Preliminary Inelastic static pushover results showing deformation capacity of all ductile primary members at the displacement limit state (DLS) displacements
5. Preliminary Foundation Report, submitted with foundation elements only

The Contractor shall also furnish additional information as requested by the Engineer to facilitate review of the preliminary design information package.

Detailed preliminary design drawings shall, as a minimum, include the following:

General Plans
Structure Plans
Abutment cross-sections
Foundation Plans
Pier (i.e. tower/bent/column) cross-sections
Foundation Detail Plans
Typical Sections
Girder layouts or framing plans
Expansion joint details
Bearing details
Structural joint and connection details

Detailed preliminary design drawings shall:

1. Contain a drawing index with drawing numbers and drawing titles
2. Be in metric units
3. Comply with the following manuals of the Department:

    a. Plans Preparation Manual
    b. Bridge Design Aids Manual
    c. Bridge Design Details Manual
    d. Bridge Memo to Designers Manual
    e. Information and Procedures Guide of the Office of Special Funded Projects
4. Be clearly marked "NOT FOR CONSTRUCTION"
5. Show the arrangement and material type and size of each structural member to demonstrate load paths from the superstructure to the ground through the substructure and foundation.
6. Be of sufficient detail to (a) define the TBS elements in plan and elevation, including deck drainage and overhead and bridge mounted signs, (b) define the mounting details for electrical and mechanical systems (c) demonstrate conformance to the requirements of the contract documents.
7. Contain preliminary utility relocation plans identifying relocation of impacted utilities within boundary of the construction based on new potholing performed by the Contractor. Contractor may require additional potholing to verify impacted utilities as approved by the Engineer.

Draft supplemental technical special provisions shall be prepared as specified under the heading "Supplemental Technical Special Provisions" of these special provisions.

Final Design Submittal

Final design submittal shall consist of the following:

1. Final design information package
2. Final detailed construction drawings
3. Final TBS design and independent check calculations
4. Final Foundation Report
5. Final quantity calculations
6. Final supplemental technical special provisions

Final design information package shall, as a minimum, include the following:

1. A statement describing any modifications to or deviations from the information submitted with the preliminary design submittal, including a detailed description of resolution of reviewer comments
2. Any revised document that has changed since the preliminary design submittal

3. Structure construction sequencing plan
4. Resident Engineer's (RE) Pending File contents as specified in the Information and Procedures Guide of the Office of Special Funded Projects of the Department

The Contractor shall also furnish additional information as requested by the Engineer to facilitate review of the final design information package.

Final detailed construction drawings shall conform to the requirements specified above for preliminary design drawings, with the following minimum additional requirements:

1. Bear the stamp, signature, and license expiration date of the Contractor's Engineer or designee, who is responsible for developing the drawing
2. Contain final utility relocation plans identifying relocation of impacted utility within boundary of the construction based on new potholing performed by the Contractor. Contractor may require additional potholing to verify impacted utilities as approved by the Engineer.

Final TBS design and independent check calculations shall be prepared as specified under the heading "TBS Design Calculations" of these special provisions.

Final quantity calculations shall be prepared as specified under the heading "Quantity Calculations" of these special provisions.

Final supplemental technical special provisions shall be prepared as specified under the heading "Supplemental Technical Special Provisions" of these special provisions.

Construction Submittal

The construction submittal shall contain the following:

1. Construction information package
2. Revised final detailed construction drawings
3. Revised final TBS design and independent check calculations
4. Revised quantity calculations
5. Revised final supplemental technical special provisions

The construction information package shall, as a minimum, include the following:

1. A statement describing any modifications to or deviations from the information submitted with the final design submittal, including a detailed description of resolution of reviewer comments
2. Any revised document that has changed since the final design submittal

The Contractor shall also furnish additional information as requested by the Engineer to facilitate review of the construction information package.

Revised final detailed construction drawings shall conform to the requirements specified above for final design drawings.

Revised final TBS design and independent check calculations shall be prepared as specified under the heading "TBS Design Calculations" of these special provisions.

Revised quantity calculations shall be prepared as specified under the heading "Quantity Calculations" of these special provisions.

Revised final supplemental technical special provisions shall be prepared as specified under the heading "Supplemental Technical Special Provisions" of these special provisions.

The construction submittal, consisting of final detailed design drawings and supplemental technical special provisions, in conjunction with the standard specifications and these special provisions, shall be of sufficient detail to (a) construct the TBS, including deck drainage and overhead and bridge mounted signs, (b) install the electrical and mechanical systems, and (c) demonstrate conformance to the requirements of the Contract documents.

TBS Design Calculations

TBS design calculations shall include both design and independent check calculations. TBS design calculations shall be submitted to the Engineer. Calculations shall include all analysis and computations necessary to design and check the TBS, including layout, structural elements, and operational features (such as deck drainage and overhead and bridge mounted signs and mounting details for electrical and mechanical systems). Design calculations shall be submitted by segment of the TBS.

1. Design calculations shall:

   a. Be bound separately for each segment
   b. Bear the stamp, signature, and license expiration date of the Contractor's Engineer or designee, who is responsible for developing the calculations
   c. Be clearly labeled as design or check calculations, indicating the contract number and title, and description of the calculations
   d. Contain a table of contents with page numbers; all calculation pages shall be numbered
   e. Be decipherable and organized so that the design logic can be easily followed
   f. Contain documentation of assumptions, conclusions, references and design logic
   g. Contain copies of design charts, with specific entries highlighted that were used in the design
   h. Contain only final input and output of computer runs
   i. Contain hand calculations, or computer-generated calculations.

2. Independent Check Calculations: Independent check calculations shall be prepared by the Contractor using a qualified individual who has not been involved with the design of the TBS. Independent check calculations shall bear the State of California Registered Professional Engineer Registration seal with signature, license number and certificate expiration date of the design engineer who is responsible for the independent check. The independent check shall include all analysis and computations necessary to independently check all aspects of the design of the TBS structural elements, and shall be prepared in the same manner as specified for design calculations. The independent checker shall not review the design calculations prior to preparing the independent check calculations. Independent check calculations shall be submitted with the design calculations by segment and element of the TBS.

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Quantity Calculations

Quantity calculations and quantity check calculations shall be prepared, compared and resolved, and submitted in accordance with the requirements of Chapter 11 of Bridge Design Aids Manual and the Plans, Specifications and Estimates Guide of the Department and the Department's current standards for quantity calculations and quantity check calculations for electrical and mechanical systems.

Supplemental Technical Special Provisions

The supplemental technical special provisions shall supplement these special provisions with the specifications necessary to construct the TBS in accordance with the Contractor's design. The supplemental technical special provisions shall not modify or alter these special provisions nor Sections 1 through 9 of the Standard Specifications.

Supplemental technical special provisions shall be prepared by using and editing the most current versions of the Department's Standard Special Provisions and Bridge Reference Specifications. The Standard Special Provisions are statewide, approved special provisions and are posted at the Division of Engineering Services-Office Engineer website (http://www.dot.ca.gov/hq/esc/oe/specs_html/index.html). The Bridge Reference Specifications are statewide special provisions used for special bridge applications, and are posted at the Structure Office Engineer website (http://www.dot.ca.gov/hq/esc/structurespecs/). The Standard Special Provisions and Bridge Reference Specifications will hereinafter be referred to as "SSPs."

Usage and editing of the SSPs shall conform to the Department's Plans, Specifications and Estimates Guide. This includes preparing the supplemental technical special provisions in the version of Microsoft Word currently used by the Division of Engineering Services-Office Engineer. Payment clauses shall be consistent with the lump sum items for the TBS.

Supplemental technical special provisions that are modifications to Sections 10 through 95 of the Standard Specifications are not SSPs, or are SSPs that are not edited consistent with the SSP instructions, and therefore are considered non-standard supplemental technical special provisions. Preparation and usage of non-standard supplemental technical special provisions shall conform to the Department's Plans, Specifications and Estimates Guide. Non-standard supplemental technical special provisions, and the engineering basis supporting the need for and content of each non-standard supplemental technical special provisions, shall be submitted with the Preliminary Design Submittal.

Conflicts between the supplemental technical special provisions for the TBS and these special provisions shall be resolved by the Contractor before submitting the supplemental technical special provisions.

QUALITY CONTROL

The Contractor shall prepare and submit preliminary design, final design, and construction submittals in accordance with the Contractor's approved design QC/QA plan. The Contractor shall maintain evidence of quality control measures taken during preparation of design submittals. Evidence of quality control measures taken shall be in the form of (a) final marked-up documents and (b) annotated checklists prepared by an individual who has reviewed the documents for conformance to the requirements of the contract documents. Annotated checklists shall depict the design procedures and submittal preparation requirements as found in the manuals and documents referenced in this section of these special provisions, and other specific design requirements listed in these special provisions.

Each design drawing and supplemental technical special provision shall have a check print, representing the final content of the design drawing or supplemental technical special provision. The designer and independent checker shall review the drawing or supplemental technical special provision for (a) conformance to the requirements of the contract documents, (b) incorporation or resolution of marked-up comments, and (c) compatibility with all related design elements. As evidence of their review, the designer and independent checker shall sign and date the check print.

Prior to submittal, the Contractor, using a qualified individual, shall review the design submittal, using annotated checklists, to verify conformance to the requirements of the contract documents.

The annotated checklists shall include, as a minimum, confirmation of the following:

1. The design submittals have been prepared in conformance with the requirements of these special provisions
2. The TBS design, including overhead and bridge mounted signs, conforms to the structural design criteria as shown on the contract plans
3. The design of mounting details for electrical and mechanical systems conforms to the design criteria as shown on the contract plans
4. The TBS design is constructable
5. The electrical and mechanical system design is installable
6. Layout is in compliance with the requirements of the plans and specifications
7. The TBS required construction work area is within the work limits shown on the contract plans
8. Utility conflicts have been identified and addressed in a manner that is consistent with Caltrans policy on high- and low-risk utilities. Utilities relocation by the Contractor are identified and timed to avoid construction conflicts.
9. Drainage has a clear path from source to outfall and storm water run-off pollution prevention is identified
10. Lighting is in compliance with the requirements of the plans and specifications. Lighting foundation have been included
11. Maintenance of the structures can be performed with existing Caltrans practices
12. Environmentally sensitive areas will not be affected by construction
13. Contractor work access is planned to remain within the limits allowed by the contract
14. The TBS and electrical system design has been coordinated with the interfaces shown on the contract plans
15. Schedule for completion and lane closures is obtainable
16. The Design uses materials that are commercially available to the Contractor by the time of construction

Any submission by the Contractor of designs, design plans, and supplemental technical special provisions prepared by the Contractor for Department review shall constitute an affirmation by the Contractor that the work detailed in the Contractor prepared design documents are complete, buildable by the Contractor, and comply with the design criteria shown on the plans and these special provisions and as directed by the Engineer.

DESIGN SUBMITTAL REVIEW

The Contractor shall submit the design submittals in accordance with these special provisions and as follows:

1. The preliminary design submittal shall be submitted to the Engineer by the Contractor after the approval of the design QC/QA plan. Preliminary design submittal shall be submitted to the Engineer by the Contractor by complete element of each segment of the TBS.
2. The final design submittal shall be submitted to the Engineer by the Contractor after the Department has accepted and reviewed the Contractor's preliminary design submittal. Final design submittal shall be submitted by complete element of each segment of the TBS.
3. The construction submittal shall be submitted to the Engineer by the Contractor after the Department has accepted and reviewed the Contractor's final design submittal, and authorized the Contractor to construct the elements depicted in the final design submittal. The construction submittal shall be submitted by each segment of the TBS.

The design submittals of the temporary structure bridge segments designated as Temporary Shoring and Support Structure (Locations A through D), shall only be submitted by complete segment, and not by element or component.

After authorization by the Engineer, the construction submittal shall become Contract plans and specifications for the TBS.

Design Review Process

Within five working days of the receipt of the submittal by the Engineer, the Engineer will notify the Contractor in writing if the submittal is determined to be complete or incomplete. If the submittal is determined to be complete, it will be "accepted" by the Engineer, the review period will begin on that day. If the submittal is determined to be incomplete, it will not be accepted and will be returned to the Contractor for resubmittal. Submittals that do not conform to all design quality control requirements of these special provisions will be determined to be incomplete and will not be accepted by the Engineer. No Department review time will be accrued toward the returned submittal. No compensation will be allowed for any costs incurred or for delay in completing the work resulting from submittals that are not accepted by the Engineer.

The Department will return written comments to the Contractor at the conclusion of the design review for each preliminary and final design submittal. The Contractor shall address all comments and modify designs as required by the comments in conformity with the plans, these special provisions, and as directed by the Engineer.

Once the Engineer has completed review of the final design submittal, and the review comments have been addressed by the Contractor to the satisfaction of the Engineer, the Contractor will be authorized to construct the elements depicted in the final design submittal. When the final design submittal is approved by the Contractor's Engineer, and authorized for construction by the Engineer, the Contractor shall prepare and submit the Construction Submittal.

SSPs and non-standard supplemental technical special provisions, including modifications to Sections 10 through 95 of the Standard Specifications, which are approved as supplemental technical special provisions prior to authorization for construction will not be considered changes in conformance with Section 4-1.03, "Changes," of the Standard Specifications.

Revisions to the Contractor's submitted design, as a result of preliminary and final design reviews will not be considered changes in conformance with Section 4-1.03, Changes," of the Standard Specifications, and no additional compensation will be allowed therefor.

Design Submittal Process

While the Contractor may submit design submittals for review in any order of segment and segment element, the design submittals will only be reviewed by the Department in the following priority order:

1. Preliminary design submittals for foundations of a structure segment will not be reviewed prior to receiving preliminary substructure and superstructure design submittals for the same structure segment.
2. Final design submittals for elements of a structure segment will not be reviewed until the Engineer has reviewed and provided comments on preliminary design submittals of the same segment.
3. Preliminary design submittals for the electrical or mechanical system on a structure segment will not be reviewed prior to reviewing preliminary superstructure design submittals for the same structure segment.
4. Final utility relocation plans will not be authorized by the Engineer unless approved by the utility owner.

Design submittals made by the Contractor that do not comply with the specified priority order, will not be considered as delaying the Contractor's controlling operation on the critical path.

The number of copies of the contents required for each design submittal shall be as follows:

Contents	Number of Copies for Each Design Submittal		
	Preliminary Design Submittal	Final Design Submittal	Construction Submittal
Design Information Package	5	5	5
Design Drawings (paper)	10	10	10
Design Drawings (electronic files)	2	2	2
Design Calculations	N/A	5	5
Check Calculations	N/A	5	5
Quantity Calculations	N/A	3	3
Foundation Report	N/A	3	3
Supplemental Technical Special Provisions (paper)	10	10	10
Supplemental Technical Special Provisions (electronic files)	2	2	2

The time to be provided for the Engineer's review of the design submittals shall be as follows:

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Design Submittal	Review Time - Weeks
Preliminary Design	3
Final Design	5
Construction Submittal	2

Should the Engineer fail to review the complete design submittal within the time specified, and the Contractor's controlling operation on the critical path is delayed (as determined by the Engineer) by the Engineer's failure to review within the time specified, an extension of time will be granted in conformance with the provisions in Section 8-1.07, "Liquidated Damages," of the Standard Specifications and in "Progress Schedule (Critical Path Method)," of these special provisions. Should the Engineer fail to review the complete design package submittal within the time specified, compensation, if any, will be made in accordance with Section 8-1.09, "Right of Way Delays," of the Standard Specifications, and "Time Related Overhead," of these special provisions.

Design submittals shall be submitted sufficiently in advance of the start of the affected work to allow time for review by the Engineer and correction by the Contractor of the submittal contents without delaying the work. The time shall be proportional to the complexity of the work, but in no case shall the time be less than the review time as specified for the type of design submittal as required elsewhere in these special provisions.

Should the Contractor submit several related submittals with review times on the controlling/critical path, or an additional submittal for review before the review of a previously submittal has been completed, the time to be provided for the review of any submittal in the sequence shall be not less than the review time specified for that submittal, plus 7 calendar days for each submittal of higher priority which is still under review.

DESIGN CHANGE CONTROL

If the Contractor's design changes after receiving authorization for construction, the Contractor shall resubmit designs for review and authorization by the Engineer prior to commencement with the changed work. Changes to the structural system, including overhead and bridge mounted signs, shall have both preliminary designs and final designs resubmitted to the Engineer for authorization. Changes to the deck drainage and mounting of electrical or mechanical systems or to non-structural components of the TBS shall have only final designs resubmitted to the Engineer for authorization. Authorization for construction, of design changes, will be issued by approved contract change order.

PAYMENT

Contractor design shall be paid for on the basis of lump sum.

The contract lump sum price paid for contractor design shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in preparing and submitting contractor design, including geotechnical investigations and slope monitoring, and all work to verify the locations of existing utilities within the boundary of the construction, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

However, should the Contractor elect to encase or cover those welds prior to receiving notification from the Engineer, it is expressly understood that the Contractor shall not be relieved of the responsibility for incorporating material in the work that conforms to the requirements of the plans and specifications. Material not conforming to these requirements will be subject to rejection. Should the Contractor elect to wait to encase or cover welds pending notification by the Engineer, and in the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for any resulting loss, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

The QC Inspector shall provide reports to the QCM on a daily basis for each day that welding is performed.

Except for noncritical weld repairs, the Engineer shall be notified immediately in writing when welding problems, deficiencies, base metal repairs, or any other type of repairs not submitted in the WQCP are discovered and also of the proposed repair procedures to correct them. The Contractor shall allow the Engineer one week to review these procedures. No remedial work shall begin until the repair procedures are approved in writing by the Engineer. In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for any resulting loss, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

The QCM shall sign and furnish to the Engineer, a Certificate of Compliance in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for each item of work for which welding was performed. The certificate shall state that all of the materials and workmanship incorporated in the work, and all required tests and inspections of this work, have been performed in conformance with the details shown on the plans, the Standard Specifications, and these special provisions.

PAYMENT

Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed therefor.

SECTION 9. DESCRIPTION OF BRIDGE WORK

The bridge work to be done consists, in general, of designing and constructing the following structure to the limits and location shown on the plans titled:

SAN FRANCISCO OAKLAND BAY BRIDGE
EAST SPAN SEISMIC SAFETY PROJECT
TEMPORARY BYPASS STRUCTURE
(Bridge No. 34-0006 TEMP)

The Temporary Bypass Structure is divided into the following three bridge structure segments:

A. West Tie-In - to be constructed with multiple lane closures and staged construction, and requiring removal of portions of the existing Route 80 concrete viaduct (Bridge No. 34-0004).
E. Viaduct – to connect the West Tie-In and East Tie-In.
F. East Tie-In – to be constructed in stages with a short-term closure of the entire bridge. The design concept envisions construction to include erection of the East Tie-In adjacent to the existing Route 80 steel truss (Bridge No. 33-0025) span YB4, between Pier YB-4 and Pier E-1, rolling-out span YB4 onto temporary supports, and rolling the East Tie-In into place.

The bridge work includes the removal of portions of existing bridges, as specified in "Bridge Removal," elsewhere in these special provisions.

Holes, depressions or other ground disturbance caused by the removal of the temporary construction entrance, including the sumps, shall be backfilled and repaired in conformance with the provisions in Section 15-1.02, "Preservation of Property," of the Standard Specifications.

While the temporary construction entrance are in use, pavement shall be cleaned and sediment removed at least once a day, and as often as necessary when directed by the Engineer. Soil and sediment or other extraneous material tracked onto existing pavement shall not be allowed to enter drainage facilities.

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MAINTENANCE

The Contractor shall maintain temporary construction entrance throughout the contract or until removed. The Contractor shall prevent displacement or migration of the rock surfacing or corrugated steel panels. Any significant depressions resulted from settlement or heavy equipment shall be repaired by the Contractor, as directed by the Engineer.

Temporary construction entrance shall be maintained to minimize tracking of soil and sediment onto existing public roads.

MEASUREMENT AND PAYMENT

The quantity of temporary construction entrance will be measured and paid for as units determined from actual count in place.

The contract unit price paid for temporary construction entrance shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing and removing the temporary construction entrance, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

The cost of maintaining the temporary construction entrance will be borne equally by the State and the Contractor.

The division of cost will be made by determining the cost of maintaining temporary construction entrance in conformance with the provisions in Section 9-1.03, "Force Account Payment," of the Standard Specifications and paying to the Contractor one-half of that cost. Clean-up, repair, removal, disposal, replacement because of improper installation, and replacement of temporary construction entrance damaged as a result of the Contractor's negligence will not be considered as included in the cost for performing maintenance.

10-1.15 TEMPORARY BYPASS STRUCTURE

Attention is directed to "Contractor Design," elsewhere in these special provisions regarding the design, acceptance, and authorization for construction by the Department of the temporary bypass structure.

This work shall consist of constructing the temporary bypass structure (TBS) complete in place, including all required bridge barrier railing, wearing surface, bridge mounted utilities and related utility relocations, deck drainage system, and signs, at the location shown on the plans and in accordance with the Contractor's design plans that are accepted and authorized by the Department for construction.

GENERAL

The TBS, is shown schematically on the plans with the required design criteria to enable the Contractor to develop the design. The TBS, as shown on the plans, is divided into the following structure segments:

1. West Tie-In,
2. Viaduct, and
3. East Tie-In

Additionally, for the purposes of design submittals, temporary structures designated as Important Construction in "Temporary Supports," elsewhere in these special provisions, shall be considered as bridge segments of the TBS. Submittals for temporary structures designated as Support Structure (Locations A through D) shall be made as one inclusive bridge segment.

Each bridge segment contains the following structure elements:

1. Foundation(s), defined as the structural elements that transfers load to the soil or foundation material. Foundation elements shall consist of components such as driven piles, tie-down anchors, and other like individual structural members or work below a pile cap or spread footing.

2. Substructure(s), defined as vertical structural elements between the foundation and superstructure elements. Substructure elements shall consist of components such as pile caps, abutments, columns, piers, drop bent caps, drilled shafts, cast-in-place piles, and other like individual structural members.
3. Superstructure, defined as the longitudinal and horizontal structural elements, and appurtenances shown on the plans, that are above the substructure. Superstructure elements shall consist of components such as beams, integral bent caps, girders, trusses, and other like individual structural members.

Unless otherwise authorized by the Department, the TBS shall be constructed in conformance with the construction sequence, also defined as steps, as shown on the plans.

The approach slab, where shown on the plans, shall be included in the Contractor's design of the TBS.

The Contractor shall furnish and install expansion joint closures for the existing west tie-in as shown on the plans. Expansion joint closures shall conform to the details shown on the plans and as specified in these special provisions. All metal parts shall conform to the provisions in Section 75-1.03, "Miscellaneous Bridge Metal," of the Standard Specifications. Where shown on the plans, asphaltic plug joint components shall conform to the requirements for asphaltic plug joint seal contained in "South Edge Girder Support," in these special provisions. Where shown on the plans, joint filler shall conform to the requirements in Section 51-1.12, "Expansion and Fixed Joints and Bearings," of the Standard Specifications. Where shown on the plans, metal parts shall receive a nonskid surface consisting of epoxy mixed with grit. Epoxy shall consist of epoxy conforming to the provisions in either Section 95-2.01, "Binder (Adhesive), Epoxy Resin Base (State Specification 8040-03)," or Section 95-2.09, "Epoxy Sealant for Inductive Loops (State Specification 8040-06)," of the Standard Specifications. Grit shall consist of commercial quality aluminum oxide, silicon carbide, or almandite garnet grit particles, sieve size 1.7-mm to 600-µm or 1.4-mm to 500-µm applied uniformly at the rate of at least 1.5-kg per square meter.

In addition to deck drainage on the TBS, the Contractor's design of the TBS shall include provisions for drainage of the existing portions of the west tie-in.

Attention is directed to "Project Information," of these special provisions regarding the materials information handout for foundation and design information. The Contractor's design of the TBS shall include a wearing surface over the Viaduct and East Tie-In. Attention is directed to "Project Information" of these special provisions regarding the project noise requirement as stated in the USCG License No. DTCG-Z71111-03-RP-002L, Amendment NO. 1, Maintenance & Logistics Command Pacific between the United States Coast Guard and The State of California Department of Transportation. A portland cement concrete wearing surface over the Viaduct and East Tie-In will not be allowed. The Contractor shall design and furnish the type and thickness of wearing surface in compliance with the MOA and the design criteria shown on the plans.

Attention is directed to the requirements under the subsection, "Land-Based Excavation Dewatering" in "Non-Storm Water Discharges," in these special provisions, regarding additional requirements that apply to pile construction. Casings shall be utilized for cast-in-place pile construction. Pile excavation shall not advance below the tip of the casing.

Attention is directed to the following sections of these special provisions regarding permit restrictions and regulations that may impact TBS design and construction:

A. Relations with the U.S. Coast Guard
B. Relations with the Regional Water Quality Control Board
C. Relations with United States Fish and Game Service
D. Maintaining Traffic
E. Sound Control Requirements
F. Obstructions

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Attention is directed to Section 7-1.16, "Contractor's Responsibility for the Work and Materials," of the Standard Specifications. Ordering or fabricating materials prior to receiving construction authorization by the Department, will be at the Contractor's risk.

Prior to proceeding with each segment of TBS construction, the Contractor shall notify the Engineer of such operations and shall not begin such operations until the Engineer, or the Engineer's authorized representative, is at the work site to observe the operation. The presence of the Engineer, or the Engineer's authorized representative, shall not relieve the Contractor of the responsibility to pay for any work performed by the Contractor that does not comply with the design plans authorized by the Department.

The Contractor may proceed with TBS construction provided that the following requirements have been fulfilled:

A. The Contractor shall not begin construction of components of foundation elements, or work below spread footings prior to the following:

1. The Engineer's acceptance of the preliminary design submittals for the foundation, substructure, and superstructure elements of an entire segment.

B. The Contractor shall not begin construction of components of substructure elements prior to the following:

1. The Engineer's acceptance and review of the final design submittals for the foundation elements of an entire segment.
2. The Engineer's acceptance the final design submittals for the substructure elements of an entire segment.
3. The Engineer's acceptance of the preliminary design submittals for the superstructure elements of an entire segment.

C. The Contractor shall not begin construction of components of superstructure elements prior to the following:

1. The Engineer's acceptance and review of the final design submittals for the substructure elements of an entire segment.
2. The Engineer's acceptance the final design submittals for the superstructure elements of an entire segment.

Public traffic will not be permitted on the TBS until superstructure final design submittals for all superstructure elements have been authorized for by the Department for construction, and all construction submittals for the TBS have been received by the Engineer.

MEASUREMENT AND PAYMENT

Temporary Bypass Structure, East Tie-In will be paid by the lump sum to the limits shown on the contract plans and the Contractor's design plans that are authorized by the Department for construction.

Temporary Bypass Structure, Viaduct will be paid by the lump sum to the limits shown on the contract plans and the Contractor's design plans that are authorized by the Department for construction.

Temporary Bypass Structure, West Tie-in will be paid by the lump sum to the limits shown on the contract plans and the Contractor's design plans that are authorized by the Department for construction.

The contract lump sum price paid for each segment of the temporary bypass structure listed in the Engineer's Estimate shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in constructing the temporary bypass structure, complete in place, as shown on the contract plans and the Contractor's design plans that are authorized by the Department for construction, and as specified in the standard specifications, the authorized supplemental technical special provisions, and these special provisions.

Full compensation for expansion joint closures shall be considered as included in the contract lump sum price paid for Temporary Bypass Structure, West Tie-in, and no separate payment will be made therefor.

10-1.155 SOUTH EDGE GIRDER SUPPORT

This work shall consist of constructing the south edge girder support at the West Tie-In complete in place, including asphaltic plug joint seals, as shown on the plans and in conformance with the Standard Specifications and these special provisions.

GENERAL

Attention is directed to "Contractor Design" and "Temporary Supports" of these special provisions. For the purpose of design of support structures, the south edge girder support is part of the support structure (Location B).

South edge girder support loads are based on the details shown on the plans. The Contractor shall design connections between the south edge girder support and support structure (Location B). The connection design loads shown on the plans shall be adjusted by the Contractor to account for any loads imposed by the Contractor's activities, the actual materials used in the south edge girder support, and for the Contractor's Design of support structure (Location B).

Attention is directed to "Welding" in Section 8, "Materials," of these special provisions.

SUBMITTALS

The Contractor shall submit complete working drawings for the south edge girder support to the following location:

• back to top		
231.0	Can Cast-in-Drilled-Hole piling and pin piles/micro-piles be used in the new foundations on the Viaduct & the East Tie-In portion of the project?	CIDH, pin/micro-mini piling can be used within the installation restrictions specified in the contract documents. See addendum 10 dated 9/22/03..
232.0	For the East Tie-in, can we retrofit/modify the existing span between Bents E1 & YB4, in-lieu of constructing a new span and perform the slide-in/slide-out, provided that the design criteria set-forth in the contract is met for the modified structure, and the portion of the existing structure outside the limits of the revised alignment is removed after traffic is switched over?	The specifications allow the option proposed by the Contractor. However, the State does not see how this can be accomplished in the time allowed for the bridge closure. The design for the TBS East Tie-In segment proposed by the Contractor must meet a number of criteria, including but not limited to the TBS Design Criteria, Contractor Area Use constraints shown on the C-sheets, and time allotted for bridge closures in the currently approved Traffic Management Plan (TMP). Bidders are advised that delays caused by additional approvals and other changes are at the Contractor's risk.
233.0	The existing trees and vegetation on the slope between existing Pier YB2 and YB1 will need to be cleared prior to removal of both the hazardous material in Zone A and the removal of the structure from YB2 to Bent 50. Is this clearing and grubbing to be included in Bid Item 43, Clearing and Grubbing?	Prior to removal of the substructure from Bent 50 to Pier YB1, hazardous material shall be excavated as specified within the hatched area shown on Sheet C-5. Clearing and grubbing required to facilitate the hazardous material excavation shall be included in Bid Item 43 "CLEARING AND GRUBBING". Clearing and grubbing necessary to facilitate bridge removal between Pier YB1 and YB2 should also be included in Bid Item 43 "CLEARING AND GRUBBING".

Summary of Correspondence

Document Type	Date of Document	Description of Document
State Letter No. 3	March 11, 2004	Response to Submittal No. 3-0 (dated 1-19-04)
State Letter No. 23	June 4, 2004	Response to Submittal No. 3-1 (dated 5-27-04)
CCM Submittal No. 3-3	June 23, 2004	Revised ETI Preliminary Design Submittal (ETI Original Draft Design Criteria Attached - Cover Sheet Only)
CCM Letter No. 30	September 13, 2004	ETI Design Criteria - Request for Contract Change Order
State Letter No. 137	September 30, 2004	Response to Request for Contract Change Order
CCM Letter No. 44	October 7, 2004	Notice of Potential Claim No. 3 - Initial Part A
CCM Letter No. 48	October 22, 2004	Notice of Potential Claim No. 3 - Supplemental Part B
State Letter No. 190	November 3, 2004	Response to Notice of Potential Claim No. 3
CCM Submittal No. 61-2	May 10, 2005	ETI Proposed Amended Design Criteria (Revision 2)
State Letter No. 415	May 17, 2005	Approval of Amended Design Criteria (dated 5-10-05)

DEPARTMENT OF TRANSPORTATION
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AX (510) 286-0550

Flex your power!
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March 11, 2004
Contract No. 04-0120R4
04-SF-80-12.6/13.2
SL# 3

Mr. Robert W. Coupe
C. C. MYERS, INC.
3286 Fitzgerald Road
Rancho Cordova, CA 95742

RE: 215-SUB.00003-0
Subject: Preliminary Design Submittal for East Tie-In

Dear Mr. Coupe:

The Department has determined the above referenced project's Preliminary Design Submittal for the East Tie-In plan is incomplete, and is therefore not accepted. See the attached checklist for details pertaining to the completeness of the submittal.

Section 5-1.14 "Contractor Design" of the Special Provisions requires the Preliminary Design Submittals to be submitted after the apprvoal of the QC/QA plan. This section also requires the Preliminary Design submittal be submitted by complete element of each segment of the Temporary Bypass Structure (TBS). Your submital combines preliminary designs for the substructure, superstructure and foundation, which is considered three submittals.

Please address the comments contained in this letter and re-submit the submittals in conformance of Section 5-1.14 of the Special Provisions after approval of the QC/QA plan. If you have any questions, please contact me at (510) 622-5660.

Sincerely,

Kenneth Loncharich
Resident Engineer

Attachments

cc: File 5.03, 58.03

CHECKLIST FOR ACCEPTANCE OF THE PRELIMINARY DESIGN SUBMITTAL FOR THE EAST TIE-IN

NOTE: This checklist is intended to verify the minimum contents as required in Section 5-1.14 of the Special Provisions. Additional information may be required as determined by the Engineer to properly evaluate the submittal.

Comments: The submittal is incomplete and cannot be accepted for review.

PRELIMINARY DESIGN INFORMATION PACKAGE		
Item	Accept?	Comments
1. Describe any modifications to or deviations from the information submitted with the proposal drawing submittal.	YES	
2. Expected expansion joint movements.	YES	
3. Preliminary loading and linear elastic response spectra force and displacement results (i.e. axial, moment, shear) on all primary components due to design loads conforming to the design criteria shown on the plans.	NO	See Comments
4. Preliminary Inelastic static pushover results showing deformation capacity of all ductile primary members at the displacement limit state (DLS) displacements.	YES	
5. Preliminary Foundation Report	YES	See Comments

DRAFT SUPPLEMENTAL TECHNICAL SPECIAL PROVISIONS		
Item	Founda-tion	Comments
6. Non-standard supplemental technical special provisions, and the engineering basis supporting the need for and content of each non-standard supplemental technical special provisions	NO	See Comments
7. Use and edit the most current versions of the Department's Standard Special Provisions and Bridge Reference Specifications. Provide engineering basis supporting the omission of relevant specifications.	NO	See Comments

Summary of Correspondence

Document Type	Date of Document	Description of Document
State Letter No. 3	March 11, 2004	Response to Submittal No. 3-0 (dated 1-19-04)
State Letter No. 23	June 4, 2004	Response to Submittal No. 3-1 (dated 5-27-04)
CCM Submittal No. 3-3	June 23, 2004	Revised ETI Preliminary Design Submittal (ETI Original Draft Design Criteria Attached - Cover Sheet Only)
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State Letter No. 137	September 30, 2004	Response to Request for Contract Change Order
CCM Letter No. 44	October 7, 2004	Notice of Potential Claim No. 3 - Initial Part A
CCM Letter No. 48	October 22, 2004	Notice of Potential Claim No. 3 - Supplemental Part B
State Letter No. 190	November 3, 2004	Response to Notice of Potential Claim No. 3
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State Letter No. 415	May 17, 2005	Approval of Amended Design Criteria (dated 5-10-05)

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March 11, 2004
Contract No. 04-0120R4
04-SF-80-12.6/13.2
SL# 3

Mr. Robert W. Coupe
C. C. MYERS, INC.
3286 Fitzgerald Road
Rancho Cordova, CA 95742

RE: 215-SUB.00003-0
Subject: Preliminary Design Submittal for East Tie-In

Dear Mr. Coupe:

The Department has determined the above referenced project's Preliminary Design Submittal for the East Tie-In plan is incomplete, and is therefore not accepted. See the attached checklist for details pertaining to the completeness of the submittal.

Section 5-1.14 "Contractor Design" of the Special Provisions requires the Preliminary Design Submittals to be submitted after the apprvoal of the QC/QA plan. This section also requires the Preliminary Design submittal be submitted by complete element of each segment of the Temporary Bypass Structure (TBS). Your submital combines preliminary designs for the substructure, superstructure and foundation, which is considered three submittals.

Please address the comments contained in this letter and re-submit the submittals in conformance of Section 5-1.14 of the Special Provisions after approval of the QC/QA plan. If you have any questions, please contact me at (510) 622-5660.

Sincerely,

Kenneth Loncharich
Resident Engineer

Attachments

cc: File 5.03, 58.03

CHECKLIST FOR ACCEPTANCE OF THE PRELIMINARY DESIGN SUBMITTAL FOR THE EAST TIE-IN

NOTE: This checklist is intended to verify the minimum contents as required in Section 5-1.14 of the Special Provisions. Additional information may be required as determined by the Engineer to properly evaluate the submittal.

Comments: The submittal is incomplete and cannot be accepted for review.

PRELIMINARY DESIGN INFORMATION PACKAGE		
Item	Accept?	Comments
1. Describe any modifications to or deviations from the information submitted with the proposal drawing submittal.	YES	
2. Expected expansion joint movements.	YES	
3. Preliminary loading and linear elastic response spectra force and displacement results (i.e. axial, moment, shear) on all primary components due to design loads conforming to the design criteria shown on the plans.	NO	See Comments
4. Preliminary Inelastic static pushover results showing deformation capacity of all ductile primary members at the displacement limit state (DLS) displacements.	YES	
5. Preliminary Foundation Report	YES	See Comments

DRAFT SUPPLEMENTAL TECHNICAL SPECIAL PROVISIONS		
Item	Founda-tion	Comments
6. Non-standard supplemental technical special provisions, and the engineering basis supporting the need for and content of each non-standard supplemental technical special provisions	NO	See Comments
7. Use and edit the most current versions of the Department's Standard Special Provisions and Bridge Reference Specifications. Provide engineering basis supporting the omission of relevant specifications.	NO	See Comments

CHECKLIST FOR ACCEPTANCE OF THE PRELIMINARY DESIGN SUBMITTAL

Segment: East Tie-in **Element:** All

Detailed Preliminary Design Drawings		
Item	Accept?	Comments
8. General Plans	YES	
9. Structure Plans	YES	
10. Abutment cross-sections	N/A	
11. Foundation Plans	YES	
12. Pier (i.e. tower/bent/column) cross-sections	YES	
13. Foundation Detail Plans	YES	
14. Typical Sections	YES	
15. Girder layouts or framing plans	YES	
16. Expansion joint details	NO	
17. Bearing details	NO	
18. Structural joint and connection details	YES	
19. Contain a drawing index with drawing numbers and drawing titles.	YES	
20. Be in metric units	YES	
21. Comply with the following manuals of the Department: Plan Preparation Manual, BDA, BDD, MTD, and Information and Procedures Guide of the Office if Special Funded Projects.	YES	
22. Be clearly marked "NOT FOR CONSTRUCTION"	YES	
23. Show the arrangement and material type and size of each structural member to demonstrate load paths from the superstructure to the ground through the substructure and foundation	NO	See Comments
24. Be of sufficient detail to (a) define the TBS elements in plan and elevation, including deck drainage and overhead and bridge mounted signs, (b) define the mounting details for electrical and mechanical systems (c) demonstrate conformance to the requirements of the contract documents.	NO	See Comments
25. Contain preliminary utility relocation plans identifying relocation of impacted utilities within boundary of the construction based on new potholing performed by the Contractor. Contractor may require additional potholing to verify impacted utilities as approved by the Engineer.	NO	Missing information related to utility relocation

Comments:

Item #3
Clarify "What is the controlling Load Group" for each component and " What are the "P, M, and V" that were used to size and detail the components.

Item #5
The only support locations are Bent 53L (Spread Footing W/ Tie Down Anchors) and Bent 53R (Pile Cap W/ 600 mm CIDH Concrete Piles). The "modifications to proposal drawings", foundation report, and the plan sheets give conflicting information for the Spread Footing Data Table and the Pile Data Table.

Items #6 and #7
The technical specifications shall be compiled in accordance with the P, S, and E guide. All modifications to the package (additions, omissions, and revisions) are considered non-standard supplemental technical special provisions. The engineering basis supporting the need for each non-standard supplemental technical special is required to be submitted for review.

Item #23
Explain in detail the load path from the existing truss into the new box beams and into Pier E1.

Item #24b
Missing mounting details for electrical and mechanical systems.

Item #24c
The contract envisioned a "move out – move in" at the East Tie-In, and the design criteria Items #9 "Temporary Stabilization of Spans YB4 & YB3", #10 "Move out Span YB4 Operation", and # 11 "Move in East Tie-In Operations" present a criteria for stabilizing and monitoring the existing structure. If the contractor proposes to modify the exist truss instead of the envisioned "Move out – Move in", he needs to submit his criteria for stabilizing and monitoring the existing truss.

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June 4, 2004
Contract No.04-0120R4
04-SF-80-12.6/13.2
Temporary Bypass Structure
SL# 00023

Mr. Robert W. Coupe
C. C. MYERS, INC.
3286 Fitzgerald Road
Rancho Cordova, CA 95742

Subject: Preliminary Design Submittal: East Tie-In
Reference: CCM Doc. No.: 215-SUB.0003-1

Dear Mr. Coupe:

The East Tie-In Preliminary Design submittals are incomplete and require additional information prior to being accepted. The following information is needed to facilitate the review:

- As commented on the previous Preliminary Design Submittal, dated January 16, 2004, the contract envisioned a "move out – move in" operation at the East Tie-In. Clearly, the design criteria has not been developed for the proposed modification of the existing truss. If the contractor opts to modify the existing truss, then a new East Tie-In specific criteria needs to be submitted together with the preliminary design package. At a minimum, the new criteria shall address the following:
  - Sequence of operations
  - Jacking operations
  - Method for controlling and monitoring deflections
  - Stabilization of structure during construction
  - Monitoring of all critical members
  - Contingency plans for any unanticipated events during operations, such as a jack failing, etc.
  - Evaluation of all existing members and connections that will be incorporated into the TBS.

- Preliminary inelastic static pushover results and capacities for ductile elements are not shown. The designer should show that the inelastic behavior of Bent 53 would not induce any additional loads into the superstructure.

cc: File 5.03, 26.08

Additionally, we would like you to submit the following information, *if available*, in order to help facilitate and expedite our review:

- Supplement the preliminary loading provided in the submittal. Provide the results from all loading combinations in Groups I-VII regardless of whether they are controlling or not. The controlling load group then needs to be identified for each member. Please provide the SAP report for member forces in addition to the graphical results.

- Loads provided are only for the final configuration. Since the bridge is to be constructed in stages, preliminary loads are required for the entire sequence from start to finish.

- Provide fatigue stress ranges for all fatigue sensitive members verses allowable stress ranges per code.

If you have any comments or questions, please contact me at (510) 622-5660.

Sincerely,

Kenneth Loncharich
Resident Engineer

C.C. MYERS, INC.

3286 FITZGERALD ROAD
RANCHO CORDOVA, CA 95742

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FAX 916-635-8961

SUBMITTAL

Document No.: 215-SUB.00003-03	
Dated: Jun 23 2004	**Job No.:** 215
Attention: Resident Engineer	
RE: 04-0120R4	
San Francisco Oakland Bay Bridge	
Temporary Bypass Structure	

To: State of California
280 Beale Street
San Francisco CA 94105

We are sending you: ☑ Attached ☐ Via Fax

☐ Drawing ☑ Plans ☐ Prog. Pmt
☐ Samples ☐ Certificates of compliance ☐ Calculations
☐ Payroll ☑ Specs ☐ Copy of Letter
☐ Change Order ☐ Schedule ☐ Invoice

Item	Date	Copies	Description	Drawing No	Rev	Status	Pages
01	Jun 22 2004	0	East Tie-In Preliminary Design Information Package Revisions		1	Pending	
02	Jun 22 2004	0	East Tie-In Preliminary Plans		1	Pending	
03	Jun 22 2004	0	CD Rom with Electronic Plan Files		1	Pending	
04	Jun 22 2004	0	CD Rom with Section 3B of the Design Information Package		1	Pending	
05	Jun 23 2004	7	East Tie-In Draft Design Criteria		0	Pending	

These Are Transmitted As Checked Below:

☑ For Approval ☐ For Review/comment ☐ Return For Correction
☐ For Your Use ☐ As Requested ☐ For Information

Remarks:
Five copies of item 5 were provided directly to Structures Design.

Signed: Robert Coupe
Project Manager

Copy To: MO

File: 215-101

05004.02
58.003

215-SUB.00003-03

DRAFT DESIGN CRITERIA

FOR THE TEMPORARY EAST TIE-IN BYPASS STRUCTURE (ETI)

PREPARED FOR:

PREPARED BY

IMBSEN & ASSOCIATES, INC.
9912 BUSINESS PARK DRIVE, SUITE 130
SACRAMENTO, CALIFORNIA 95827

JUNE 23, 2004

CC MYERS INC.

September 13, 2004

Document No.: 215-STL.00030

State of California
Department of Transportation
333 Burma Road
Oakland, CA 94607

Temporary Bypass Structure
Contract No. 04-0120R4
CCM Job # 215

Attn: Mr. Kenneth Loncharich
Resident Engineer

Re: East Tie-In Design Criteria

Dear Mr. Loncharich,

Our design subcontractor, Imbsen & Associates, Inc. and your design team have spent a considerable effort in developing a design criteria to be used for the East Tie-In. This has been a work in progress, and as of today, is still not complete. In doing this, Imbsen has had to redirect their resources from the design work to the development of this design criteria. As a result, costs have been incurred and valuable time spent working on the criteria, causing the design of the East Tie-In to be lagging.

Section 10-1.15 of the Special Provisions indicates that the contract plans contain criteria to enable the contractor to develop the design. This has proven to not be the case with the East Tie-In. As such, we request that you issue a Contract Change Order to compensate us for the costs and delays that have resulted from the development of the new East Tie-In design criteria.

Very Truly Yours,
C. C. MYERS, INC.

Robert W. Coupe
Project Manager

cc: MO
JG
DH

File: 215-101

49.00 - 5.04

P.O. Box 2948, Rancho Cordova, CA 95741 • 3286 Fitzgerald Rd., Rancho Cordova, CA 95742 • 916•635•9370 • Fax 916•635•1527

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 622-5660, (510) 286-0550 fax

CC Myers
51 Macalla Road
San Francisco, CA 94130

Attn: Mr. Bob Coupe

September 30, 2004

Contract No. 04-0120R4
04-SF-80-12.6, 13.2
Temporary Bypass Structure

Letter No. 05.03.01-000137

Subject: East Tie-In Design Criteria

Dear Mr. Coupe,

This Office has received and reviewed your request for additional compensation for the development of design criteria for the East Tie-In design selected by your team. The Department has comments in regards to this request.

Section 10-1.15, Paragraph 3 "General" states that the TBS is shown schematically on the plans with the required design criteria to enable the Contractor to develop the design. There is sufficient information provided to complete a design at the East Tie-In following the requirements for a simply-supported double deck span. CC Myers/ IAI, however, has chosen to deviate from this specification to a more complex continuous span with an intermediate bent. In choosing this design, CCM/IAI has increased the overall complexity of the work, which now must be supplemented by additional design criteria not already included in the contract plans and specifications.

CC Myers/ IAI has chosen a design different from one that could be generated using the information provided by the Contract plans and specifications. As such, the additional costs for generating new design criteria shall be borne solely by CCMyers/IAI.

The State will only process a no cost change order, initiated by CCMyers, to allow for the deviation from the Contract Plan and Specification design criteria.

Sincerely,

Gary Lai
for

Resident Engineer
Lourdes David

cc: DAdams,ABata,ERufino
file: 05.03.01

CC MYERS INC.

October 07, 2004

Document No.: 215-STL.00044

State of California
Department of Transportation
333 Burma Road
Oakland, CA 94607

Temporary Bypass Structure
Contract No. 04-0120R4
CCM Job # 215

Attn: Mr. Lourdes David
Resident Engineer

Re: East Tie-In Design Criteria

Dear Mr. David,

We are in receipt of your letter 137 regarding the above noted matter. In your letter, you state that you will be issuing a no cost change order to allow for the deviation of the contract to allow the implementation of our East Tie-In design concept. We do not believe that this is necessary. The reason for this is that the project specifications allow for the East Tie-In design to be something other than the roll out/roll in concept that was envisioned by the State in the contract. You also quote the portion of Section 10-1.15 of the Special Provisions that specifies that the design criteria shown on the plans is sufficient for the Contractor to develop the design. This clause contradicts the other portions of the specifications that allow us to use an alternate design. In essence, the contract allows for alternative design concepts, but the design criteria is only applicable to a simply supported double deck span.

RECEIVED
OCT - 8 '04

Also in your letter, you indicate that our chosen design is more complex and must be supplemented with additional design criteria not already included in the contract plans and specifications. We acknowledge this and have spent a considerable effort to date in developing this additional criteria. Your statement that we have deviated from the specifications in producing a more complex design is not valid. The specifications do allow us to produce a more complex design. They do not, however, require that we develop and additional criteria from that shown in the plans to supplement it, as you suggest.

It is for the above discussed reasons that in our letter 215-STL.00030, we requested the issuance of a Contract Change Order to cover the cost of and time for the development of the design criteria to supplement the criteria shown in the plans. We again re-iterate that request. In the mean time however, based on the discussions and conclusions reached in our meeting with you on October 5, 2004, we are forwarding to you on behalf of our designer, Imbsen & Associates, Inc., a Notice of Potential Claim regarding this matter. Please find this notice attached.

As stated in the Notice of Potential Claim from Imbsen, all parties agree that the new East Tie-In design criteria will be an ongoing effort through completion of the final design. As such, we are not able to ascertain what impact this new criteria will have on the cost and time for construction. We

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therefore, intend to further evaluate the matter once the criteria is complete and we reserve our right to make an additional request for a Contract Change Order to cover the cost and time required for implementing those aspects of the new design criteria that deviate from the current contract requirements.

Very Truly Yours,
C. C. MYERS, INC.

Robert W. Coupe
Project Manager

cc: BK, MO, JG, DH

File: 215-101, 215-9903

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

NOTICE OF POTENTIAL CLAIM

CEM-6201A (NEW 9/2002)

FOR STATE USE ONLY		
Received by:	(For Resident Engineer)	Date:

To	CONTRACT NUMBER	DATE	IDENTIFICATION NUMBER
Lourdes David (resident engineer)	04-0120R4	10/7/04	3

This is an initial Notice of Potential Claim for additional compensation submitted as required under the provisions of Section 9-1.04 "Notice of Potential Claim" of the Standard Specifications. The act of the Engineer, or his/her failure to act, or the event, thing, occurrence, or other cause giving rise to the potential claim occurred on:

DATE: 10/5/04

The particular nature and circumstances of this potential claim are described as follows:

The Caltrans Design Criteria as included in the Contract Plans and Special Provisions is not in conformance with the Contract between Caltrans and C.C. Myers. Caltrans encouraged potential bidders to submit alternatives to the roll-out/roll-in that they envisioned. Caltrans did not contractually require C.C. Myers to provide for a new design criteria for the alternative prior to accepting or as a condition for accepting the bid. This is a change to the contract for both cost and schedule.

Caltrans and IAI agree that the new East Tie-In design criteria needs to be an ongoing effort through the completion of the final design. This added requirement by Caltrans has a significant impact on our design cost and schedule. The nature of the costs incurred includes design time and costs.

(attach additional sheets as needed)

The undersigned originator (Contractor or Subcontractor as appropriate) certifies that the above statements and attached documents are made in full cognizance of the California False Claims Act, Government Code Sections 12650-12655. The undersigned further understands and agrees that this potential claim to be further considered, unless resolved, must fully conform to the requirements in Section 9-1.04 of the Standard Specifications and must be restated as a claim in the Contractors written statement of claims in conformance with Section 9-1.07B of the Standard Specifications.

Imbsen & Associates, Inc.

SUBCONTRACTOR or CONTRACTOR

(Circle One)

(Authorized Representative)

For subcontractor notice of potential claim

This notice of potential claim in knowledged and forwarded by

CC MYERS INC

PRIME CONTRACTOR

(Authorized Representative)

ADA Notice For individuals with sensory disabilities, this document is available in alternate formats. For information call (916) 654-6410 or TDD (916) 654-3880 or write Records and Forms Management, 1120 N Street, MS-89, Sacramento, CA 95814

C C MYERS INC.

October 22, 2004

Document No.: 215-STL.00048

State of California
Department of Transportation
333 Burma Road
Oakland, CA 94607

Temporary Bypass Structure
Contract No. 04-0120R4
CCM Job # 215

Attn: Mr. Lourdes David
Resident Engineer

Re: East Tie-In Design Criteria
Notice of Potential Claim No. 3

Dear Mr. David,

Attached please find Part B to our Notice of Potential Claim No. 3. We are forwarding this to you, on behalf of our designer, Imbsen & Associates, Inc., in accordance with Section 9-1.04 of the Standard Specifications, as amended by the Special Provisions.

As stated in the Notice of Potential Claim from Imbsen, and our previous correspondence regarding this matter, all parties agree that the new East Tie-In design criteria will be an ongoing effort through completion of the final design. As such, we are not able to ascertain what impact this new criteria will have on the cost and time for construction. We therefore, intend to further evaluate the matter once the criteria is complete and we reserve our right to make an additional request for a Contract Change Order to cover the cost and time required for implementing those aspects of the new design criteria that deviate from the current contract requirements.

Very Truly Yours,
C. C. MYERS, INC.

Robert W. Coupe
Project Manager

cc: MO, DH

File: 215-101, 215-9903

Faxing 3 pages to 510-286-0550 on October 22, 2004 at about 10 AM.

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL NOTICE OF POTENTIAL CLAIM
CEM-6201B (NEW 9/2002)

FOR STATE USE ONLY		
Received by:	(For Resident Engineer)	Date:

To	CONTRACT NUMBER	DATE	IDENTIFICATION NUMBER
Lourdes David (resident engineer)	04-0120R4	October 20, 2004	3

This is a Supplemental Notice of Potential Claim for additional compensation submitted as required under the provisions of Section 9-1.04 "Notice of Potential Claim" of the Standard Specifications. The act of the Engineer, or his/her failure to act, or the event, thing, occurrence, or other cause giving rise to the potential claim occurred on: DATE: October 5, 2004

The particular nature and circumstances of this potential claim are described in detail as follows:

The CC Myers/IAI design for the East Tie-In (ETI) is different than that represented in the Caltrans Notice to Contractors and Special Provisions for Contract No 04-0120R4. Caltrans did not prohibit an alternative to the roll-out/roll-in, nor the use of a multi-span, in fact they asked for innovative ideas. The CC Myers/IAI design for the ETI includes a steel rigid frame, which is supported at mid-span (i.e. Bent 53) and utilizes a portion of the upper and lower deck of existing Span YB4.

The Design Criteria included in the Caltrans Contract Plans specifically addresses the anticipated roll-out/roll-in option envisioned by Caltrans. As the design progressed beyond the bid and the preliminary submittal stage, Mr. Tom Ostrom of Caltrans requested that a site-specific criteria for the ETI be developed and submitted with the final plans. It was recognized at that time that the development of the criteria would be an ongoing partnering effort as the design progressed with continuous development by IAI and intermittent submittals to Caltrans for review. The magnitude of the design criteria development and its impact on our design was discussed at a partnering meeting held on October 5, 2004. We were also advised at this meeting that additional compensation along with the appropriate extension to the contract time would not be forthcoming.

(attach additional sheets as needed)

The basis of this potential claim including all relevant contract provisions are listed as follows:

The basis for our claim is that the design effort has been affected by development of the "ETI Bridge Specific" criteria. C.C. Myers/IAI team is requesting that additional time and compensation be given since this has had a considerable impact on our progress to date.

At a pre-bid meeting in Oakland, Caltrans asked for innovative concepts. Question 232 of the Bidder Inquiry List asked if the span between Bents E1 and YB4 can be modified or retrofitted. Caltrans said this was acceptable as long as the Contractor met a number of criteria. Nowhere did it state a new criteria would be required. The Special Provisions state "The TBS is shown schematically on the plans with the required design criteria to enable the Contractor to develop the design and complete the construction." Nowhere did it state a new criteria would be required. Caltrans awarded the contract to CC Myers, thus accepting their alternative, which was represented with proposal drawings with the bid package.

(attach additional sheets as needed)

The estimated dollar cost of the potential claim including a description of how the estimate was derived and an itemized breakdown of the individual costs are attached hereto.

We are not able to come up with a total cost for this NOPC until the ETI Bridge Specific Design Criteria is complete and it's impacts can be fully ascertained.. We have come up with the following tasks for cost and time of the design aspect of this NOPC:

a. Conduct analysis for sensitivity studies,

b. Verification of potential seismic design strategies,

c. Compliance with Caltrans' new requirements,

d. Final seismic design verification,

e. Develop and coordinate the review by Caltrans through the partnering,

f. Complete

Cost estimates for the engineering and support staff will include the following classifications:

- Project Engineer
- Project Engineer

- Design Engineer
- CADD Operator

(attach additional sheets as needed)

A time impact analysis of the disputed disruption has been performed and is attached hereto. The effect on the scheduled project completion date is as follows:

Since the development of the design criteria is an ongoing effort, only an estimate of 5 months delay to date can be made at this time and complete verification of the impact through the project schedule is not possible at this time.

(attach additional sheets as needed)

The undersigned originator (Contractor or Subcontractor as appropriate) certifies that the above statements and attached documents are made in full cognizance of the California False Claims Act, Government Code Sections 12650-12655. The undersigned further understands and agrees that this potential claim to be further considered, unless resolved, must fully conform to the requirements in Section 9-1.04 of the Standard Specifications and must be restated as a claim in the Contractors written statement of claims in conformance with Section 9-1.07B of the Standard Specifications.

Imbsen & Associates, Inc.

SUBCONTRACTOR OR CONTRACTOR

(Circle one)

(Authorized Representative)

For subcontractor notice of potential claim

This notice of potential claim in acknowledged, certified and forwarded by

C.C. MYERS INC

PRIME CONTRACTOR

(Authorized Representative)

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 622-5660, (510) 286-0550 fax

CC Myers
51 Macalla Road
San Francisco, CA 94130

Attn: Mr. Bob Coupe

Ref: 215-STL.00048

November 03, 2004

Contract No. 04-0120R4
04-SF-80-12.6, 13.2
Temporary Bypass Structure

Letter No. 05.03.01-000190

Subject: NOPC # 3

Dear Mr. Coupe,

This Office acknowledges receipt of CC Myers's Notice of Potential Claim No. 3 Part B regarding the East Tie-In Design, dated October 22, 2004.

The current East Tie-In design by CC Myers and Imbsen and Associates Inc. (IAI) deviates from the requirements of the contract plans and Special Provisions. While alternate designs are allowed by contract, they must still adhere to the specified design criteria shown on the plans and Special Provisions. The design by IAI fails to meet these requirements. Rather than rejecting the design, the State has shown a willingness to work with IAI to modify the design criteria. The State has also requested that IAI assemble and furnish the modified design criteria that is being used for the East Tie-In design to help facilitate the State's review for the design submittals. This request is in accordance with Special Provisions Section 5-1.14 "Contractor Design" under subsection "Final Design Submittal", which states, "The Contractor shall also furnish additional information as requested by the Engineer to facilitate review of the final design information package". As CC Myers and IAI are presenting a design that does not follow the design criteria specified by the contract plans and Special Provisions, an additional criteria would had to have been developed, reviewed, and accepted in order for the design to be completed.

As stated in Special Provisions Section 10-1.15 "Temporary Bypass Structure", the contract plans contain sufficient design criteria for the Contractor to develop a TBS design. The envisioned roll-in roll-out concept is but one design that could have been generated using the criteria provided by the contract.

It is for these reasons that this Office finds no merit to this Notice of Potential Claim.

Please contact me at (510) 286-0511 for any additional questions.

Sincerely,

Gary Lai
Structures Representative
for
Resident Engineer
Lourdes David

cc: D Adams, A Bata, E Rufino

file: 05.03.01, 62.03

62.02.03

C.C. MYERS, INC.
An Equal Opportunity / Affirmative Action Employer

51 MACALLA ROAD
SAN FRANCISCO, CA 94130

415-399-0175
FAX 415-399-0587

SUBMITTAL

Document No: 215-SUB.00061 - 02
Dated: May 10 2005 **Job No.:** 215
Attention: Mr. Lourdes David
RE: 04-0120R4
San Francisco Oakland Bay Bridge
Temporary Bypass Structure

To: State of California
Department of Transportation
333 Burma Road
Oakland CA 94607

Item	Date	Copies	Description	Drawing No	Rev	Status	Pages
01	May 06 2005	6	Revised East Tie-In Draft Design Criteria (Dated 5/6/05)		1	Pending	4

Remarks:
Please find attached East Tie In Supplement Design Criteria

Copy To: Main Office

File: 215-101

Signed: <<< Original Signed >>>
Robert W. Coupe
Project Manager

3286 Fitzgerald Road, Rancho Cordova, CA 95742, Tel No. 916-635-9370 Fax No. 916-635-1927

58.45;99.21

IMBSEN & ASSOCIATES, INC.
Engineering Consultants
A TRC Company

RECEIVED
MAY 16 2005
CC MYERS, INC.
JOB 215 TEMP. BYPASS STRUCTURE

May 6, 2005

#1295-320

IAI Letter #:89

IC - 01862
215-201
RC
JG
CT (Submittal 6 | r2)

Mr. Bob Coupe
C.C. Myers, Inc.
3286 Fitzgerald Road
Rancho Cordova, CA 95742

Subject: East Tie In Supplemental Design Criteria

Dear Mr. Coupe:

Attached, please find the revised Supplemental Design Criteria based on Caltrans comment for the East Tie In. The attached document is essentially the same document that Caltrans had forwarded to us on March 24, 2005 with the addition of the clarification items regarding fatigue.

The issue raised in IAI letter No. 85 regarding the applicability of BDS 2000 for calculating compression capacities of non compact members of the existing bridge remains outstanding. Per your direction, we have excluded this item from the design criteria.

If you have any questions give me a call at (916) 366-0632.

Sincerely,

Roy A. Imbsen, P.E., D.Engr.
Project Manager

cc: IAI File, MS, EA, MV, DM
Attachment: East Tie In Supplemental Design Criteria (dated May 6, 2005)

Sacramento Office
9912 Business Park Drive
Suite 130
Sacramento, CA 95827
(916) 366-0632 Phone
(916) 366-1501 Fax

San Diego Office
9471 Ridgehaven Court
Suite E
San Diego, CA 92123
(858) 505-8881 Phone
(858) 505-9515 Fax

Irvine Office
21 Technology Drive
Irvine, CA 92618
(949) 727-9336 Phone
(949) 727-7391 Fax

Fresno Office
7395 N. Palm Bluffs Ave.
Suite 104
Fresno, CA 93711
(559) 449-6190 Phone
(559) 449-4591 Fax

Oakland Office
167 Filbert Street
Oakland, Ca 94607
(510) 267-1835 Phone

SUPPLEMENTAL DESIGN CRITERIA

FOR THE TEMPORARY BYPASS STRUCTURE

EAST TIE-IN (ETI)

PREPARED BY:

IMBSEN & ASSOCIATES, INC.
9912 BUSINESS PARK DRIVE, SUITE 130
SACRAMENTO, CALIFORNIA 95827

May 6, 2005

1.01

This amended design criteria has been developed to augment the design criteria shown in the project plans as it relates to the East Tie-In segment of the Temporary Bypass Structure. The sections contained herein that have the same number as in the project plan criteria shall supercede the project plan criteria as they pertain to the East Tie-In only. Sections that are omitted from this amended design criteria remain as written in the project plan criteria, except that sections 10 and 11 in the project plan criteria are omitted in their entirety and replaced with the criteria contained in this supplemental design criteria document.

1.1 Definition of Terms:

Temporary Bypass Structure - East Tie-In (TBS- ETI)
The Temporary Bypass Structure - East Tie-In includes in the East segment of TBS spanning between existing Piers E1, to the new Bent #53, continued to the cantilever truss support near new Bent 52 of Viaduct Structure. The ETI structure includes new structural framing as well as the southern portion of existing YB4 Truss Span.

- Temporary Structures
- Temporary Structures are those used to build the TBS, or remove portions of existing bridge structure to facilitate TBS construction. Temporary Structures are classified as Ordinary or Important.

Ordinary Construction

- Falsework
- Shoring

Important Construction (for operations of High Consequence)

- Load Transfer from the existing YB4 truss to the new E TI structural steel frame and removal of the South Truss of Span YB4.
- Placement of the North Support System and Removal of the North Truss and portions of Existing Floor Beams.
- Stabilization and removal of spans YB3 and YB4

MATERIALS

3.3 Structural Steel for ETI

3.3.1.1 Existing YB4 Truss

See Section 10.1.2

3.3.5 Fatigue

The existing YB4 shall be checked for 2,000,000 cycles of loading in its final state after being incorporated into the ETI. Contractor's Engineer shall determine the appropriate number of loading cycles based on the components previous design stress range, duration of temporary condition, and the anticipated stress ranges during the load transfer stages.

New components shall be checked per BDS to withstand fatigue induced by 500,000 cycles of loading.

4. SEISMIC DESIGN

4.2a ETI Segment and Articulations East

Tie-In

The East Tie-In may be a two-span continuous double-deck structure. On the West side, the ETI may be supported by a superstructure hinge at the end of the Viaduct segment (Fig. 4.2 need not apply to the ETI). The connection between the ETI superstructure and Pier El may fuse after the forces associated with the DEE and all service load combinations.

Any attachments to Pier El that are necessary to support the superstructure of the ETI shall be designed with a safety factor not less than 3.0. The anchorage shall be designed to resist the total design seismic force of the ETI span only.

4.2.4 Dynamic Characteristics - East Tie-In

The alternative articulation of the ETI is defined in Section 4.2a

9. TEMPORARY STABILIZATION FOR SPANS YB4 &YB3

9.2 Delete this section from the design criteria in the project plans.

9.3 Delete this section from the design criteria in the project plans.

10. INCORPORATING THE EXISTING YB4 SPANS INTO EAST TIE-IN DESIGN

10.1 Existing YB4 As-Built Material Properties

The properties of the materials of existing YB4 shall be those shown on the as-built drawings as summarized in the sections below. The Contractor's Engineer shall verify the section size and properties of the components that will be incorporated into the ETI.

10.1.2 Structural Steel Original 1934:

f_y = 37, 000 *psi*, = 62, 000 *psi* (carbon steel)

= 45, 000 *psi*, *1*, = 80, 000 *psi* (silicon steel)

10.1.3 Lightweight Concrete 1964 Modifications: f= 4500 *psi*, f_L, =1800 *psi*, n =15

Reinforcement - Intermediate Grads: =

40ksi per CRSI

10.1.4 Structural Steel 1964 Modifications:

A440: f = 45,000 *psi*, f_u= 55,00 *psi* T1

: f_y= *100, 000 psi*, f_u= *115, 000* psi

10.2 Monitoring and Contingency Plan

10.2.1 Jacking System Operation

Plans and a written procedure shall be prepared for the load transfer operations from the existing YB4 span to the new ETI structural steel frame. Plans shall show and describe the jacking system, equipment, all load carrying components and anticipated construction load to be applied to span. The system shall have provisions for adjustment of the position of the jacked span at final location. The procedures shall include: proposed jacking control, manifold arrangements and hydraulic pressures; calibration procedures and certification; description of fail-safe control system; rehearsal of the operation; and description of the required monitoring system. Rehearsal shall involve all equipment and personnel planned for use in the load transfer operation. The plans and written procedures shall be submitted for review and approval prior to the commencement of load transfer operations.

10.2.2 The contractor shall submit a monitoring plan for monitoring and documenting the operations for all load transfer activities from the existing YB4 span to the new ETI structural steel frame. The Contractor shall identify the major risks associated with these operations and develop a contingency plan to mitigate these risks. Contingency actions such as requirements for reliable power sources, and adequate staffing shall be included in the plans. Back up equipment and alternative plans for safety and time-critical operations shall be provided. The monitoring plan and contingency plan submittals shall be reviewed and approved prior to the commencement of load transfer operations.

10.2.3 At a minimum, the monitoring plan for the load transfer processes shall include detailed analysis to establish safe tolerances for applied forces and displacements.

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program
333 Burma Rd.
Oakland, CA 94607
(510) 622-5660, (510) 286-0550 fax

CC Myers
51 Macalla Road
San Francisco, CA 94130

Attn: Mr. Bob Coupe

Ref: 215-SUB.00061-02, 215-SUB.00061-01, 215-SUB.00061-00

May 17, 2005

Contract No. 04-0120R4
04-SF-80-12.6, 13.2
South – South Detour

Letter No. 05.03.01-000415

Subject: East Tie-In - Design Criteria

Dear Mr. Coupe,

This Office has received and reviewed the East Tie-In Design Criteria as submitted on May 11, 2005. At this time, this Office only has the following comment:

- Title of the document shall be revised to read "Amended Design Criteria" and not "Supplemental Design Criteria"

With this minor change, there will be no further comments regarding this document. C.C. Myers, Inc. and Imbsen and Associates, Inc. are reminded that a Contractor requested change order must be requested, processed, and approved before final acceptance of the East Tie-In scheme can be provided. As previously stated, this Office will only consider this change at no cost to the State.

It is this Office's understanding that the previous East Tie-In Final Foundation and Final Substructure design submittals (215-SUB.00060-00 & 215-SUB.00071-00) are no longer considered to be correct. Based upon this fact, this Office will not be accepting nor making reviews of these packages. Please indicate in writing otherwise if this is not the correct interpretation of discussions from past design coordination meetings.

Sincerely,

Gary Lai
Structure Representative
for
Resident Engineer
Lourdes David

cc: E. Rufino
D. Quintana
D. Adams
A. Bata
S. Morrison

file: 05.03.01, 58.45

SOUTH/SOUTH DETOUR PROJECT 1295

DESIGN MEETING MINUTES

Location:	Imbsen & Assoc. Inc. 9912 Business Park Drive Suite 130 Sacramento, CA 95827	Date: Time:	March 16, 2004 10:00 a.m.- 3:30 p.m.

Minutes Prepared By: Lance A. Schrey, Imbsen & Associates, Inc.

Attendees List: See Attachment 1

Purpose

The purpose was to have all parties working on the project to meet and set up a system to communicate with each other.

It is not the intent of these meeting minutes to change the contract in any way.

Attachments

Attachment 1 – Attendees
Attachment 2 – Agenda

Distribution List

Dan Adams	Caltrans (to distribute to Caltrans)
J. Ronning	DCCI (to distribute to DCCI)
IAI Attendees	
IAI File 1295.310.01	

Meeting Notes

The following is a summary of pertinent issues, that were addressed at the meeting:

- Tom said that Caltrans has 3 teams set up to review the three different segments of the project. He said Dan would manage the QA team.

- Dan went over what he felt were the important parts of the criteria in Sections 1-4:

    - Section 1: He discussed important and ordinary structures.
    - Section 2: The loading criteria placed on the plans was used, since the falsework loading was deemed not adequate.
    - Section 3: He said due to the temporary nature of the structure the need for epoxy coated reinforcement was removed and the amount of cycles used for fatigue was reduced.
    - Section 4:
        - 4.1: Elastic response for the DEE event, remain stable under DLS.
        - 4.3: Capacity protected elements and P-Delta effect.
        - 4.4: No time history required
        - 4.7: Fuses to be in the bearings or the plastic hinges
        - 4.8: Expected properties
        - 4.9: Deformation from SDC
        - 4.10: High strength bolts
        - 4.11: Seismic detailing
        - 4.12: Design seismic loading

- Tom said a peer review team was set up for all of the Bay Bridge structures and they felt it was important to take into account vertical acceleration and for the floor beams to remain elastic. He said that to develop an ARS curve a return period of 92 years (appropriate for a five year life) was used (he said this was similar to the functional level earthquake for the other of the Bay Bridge projects). Therefore the DEE for the TBS would be similar to the FEE of the permanent structure.

- Tom discussed Design Criteria No. 6 sheet: He said Note 1, 50 mm cut of the existing columns, was removed because it was felt that it was not needed to capacity protect the existing floor beams.

- Tom discussed Design Criteria No. 7 sheet:
    - He said that 3 frames for the West Tie-In need to be looked at.
    - He said that when the existing structure from Bent 48 to the east is removed, the remaining structure will rely on Support Structures "A", "C" and "D" for support.
    - He said that the existing substructure is expected to fail in the seismic event and the SSL's are to act as a "catcher" system.
    - 4.2 (g):
        - He feels IAI's scheme will have problems meeting this section of the criteria.
        - Caltrans has concerns that the existing prestressing in the transverse beams may only be partially bonded.
        - The allowance for vertical support for Structure Support Location "D" was removed in Addendum # 5.
        - Caltrans envisions moving Westbound traffic back first, followed 6-9 months later by the Eastbound traffic, then remove the TBS.

- Tom discussed Design Criteria No. 8 sheet: He said that a great deal of geotechnical information has been provided and Caltrans would have to see if more information would be required.

- Tom discussed Design Criteria No. 9:
    - Caltrans feels the floor beam connection is the weak link.
        - Caltrans doesn't want other forces attracted to the floor beams.
        - Concern with the columns peeling apart.
    - 8.2.1: Dead load table stiffness of new supports only and all mass to arrive at fundamental period.
    - 8.2.2: Caltrans wants the timber blocking so the structure does not see a jolt
    - 8.6.3: Monitoring - Caltrans has concerns that the ducts are not fully grouted, which could cause problems when the south girder is peeled apart. They want to verify the status of the bonding of the existing prestresssing steel. Deflection control system important at South Edge Girder.
    - 8.7.2: Caltrans wants to see more detail on the jacking system @ SSL "A", "B" and "C".
    - 8.9: Concern for deflection control.

- Tom discussed the south edge girder: The intent was to get one girder to work for the bypass and the final condition. Caltrans could not get one girder to work for both conditions.

- Tom said they are treating the Viaduct like a new bridge since it does not touch the existing structure.

- Tom discussed the East Tie-In:

    - He said modifying the existing structure puts the State more at risk then the roll-in/roll-out would.
    - He said a lot of criteria was developed for the West Tie-In, but not for the East Tie-In since they were anticipating a roll-in/roll-out scheme. He felt Caltrans would need to work with the Contractor to come up with a performance based criteria for the proposed East Tie-In Segment.
    - He said from their review to date, Caltrans has concerns that there may be a lack of redundancy
    - Since the Contractor wants to use the existing structure, Caltrans wants the contractor to verify the soundness of the existing rivets and any section loss due to rust of the existing members.

- Roy brought up concerns with the wind loading controlling the bearing design at Bent 48. Tom said they would look into it.

- Bob asked about an RFI process to answer questions. Nothing was decided.

- Caltrans has electronic files (DGN) of the contract plans. Ken will get these and forward to Bob.

- Caltrans will get back to the Contractor on how to incorporate Design Plans with Contract Plans.

- It was determined to have meetings at Imbsen's office Tuesday and Friday mornings at 9:00 am. Dan volunteered to come up with an agenda for the meetings.

- For Friday's meeting Caltrans will provide a list of where the design deviates from the Design Criteria.

- Caltrans review comments for the QA/QC Plan Submittal were reviewed and the following revisions will be made:
    - The identification for the submittals will be the date.
    - The schedule will be included in the QA/QC plan.
    - A copy of the stamps which are being placed on the plans will be added to the QA/QC plan.

- Reference to the State as the client or co-client will be removed.
- It will be noted that CC Myers will provide the quantities.

- Caltrans review comments for the West Tie-In Segment were reviewed and the following revisions will be made:
  - Caltrans would like special provisions associated with all of the items of work to be pulled and then noted why they are not being used. Ed said he would place the date in the footer of all pages.
  - Caltrans would like free body diagrams for the primary components for the controlling load cases to see the load path.
  - Todd will check into the plans not matching the Preliminary Foundation Report pertaining to tie-downs at some of the bents.
  - IAI will add detail for joint seal at the top of the beam.
  - More detail needs to be provided for the bearings. Todd said he is planning on using neoprene strip at the abutment.
  - Todd will look into a break in the South Edge Girder between Bent 43B and Bent 44.
  - Tom said the period called out in the Contract Plans refers to a cracked model.
  - IAI needs to provide utility information.

- Caltrans review comments for the Structure Support Locations were reviewed and the following revisions will be made:
  - Caltrans would like free body diagrams for the primary components for the controlling load cases to see the load path.
  - Push over analysis will be provided.
  - Caltrans would like special provisions associated with all of the items of work to be pulled and then noted why they are not being used.
  - How to adjust the structure using jacking will be shown.
  - All of the items for #23 and #24 will be addressed.

- Caltrans review comments for the East Tie-In Segment were reviewed and the following revisions will be made:
  - Caltrans would like free body diagrams for the primary components for the controlling load cases to see the load path.
  - Caltrans would like special provisions associated with all of the items of work to be pulled and then noted why they are not being used.
  - More detail will be provided for the bearings and the joint seals.
  - Caltrans wants to work with the contractor to come up with a criteria for the East Tie-In.

ATTACHMENT 1
Temporary Bypass Structure
Meeting with
CALTRANS AND C.C. MYER'S TEAM

Name	Organization	E-mail	Phone No.
1. KEN LONCHARICH	CALTRANS	KLONCHAR@DOT.CA.GOV	(510)622-5660
2. BOB COUPE	C.C. MYERS INC	BCOUPE@CCMYERS.COM	916-635-9370
3. Lance Schrey	IAI	schreye imbsen.com	366-0632
4. E.D "JACK" GIESEKE	DCCI	EDGJACKZ@VERIZON	5036387052
5. Jim Ronning	DCCI	jimronning@msn.com	952 4706399
6. Ghassam Dini	IAI	gdini@Imbsen.com	366-0632
7. RON PAZ	DCCI	rpaz@DANNYS CONSTRUCTION.COM	415-561-3321
8. DAN ADAMS	CALTRANS	dan_z_adams@dot.ca.gov	(916) 277-8358
9. TOM OSBORN	CALTRANS	TOM_OSBORN	(916) 227-419
10. PETER SIEGENTHALER	CALTRANS	Peter_Siegenthaler@dot.ca.gov	(510) 622-5112
11. Amer Bata	3	amer_bata@dot.ca.gov	(510) 622-5110
12. Roy A. Imbsen	IAI	raimbsen@imbsen.com	(916)366-0632
13. MAJID SARRAF	IAI	msarraf@imbsen.com	(916)360-0632 #52
14. TODD LAMBERT	IAI	tlambert@imbsen.com	916-366-0632
15. JOHN F. WALTERS	CALTRANS OSC	john_f_walters@dot.ca.gov	(415) 356-6634
16.			
17.			
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ATTACHMENT 2

BAY BRIDGE TEMPORARY BYPASS

SOUTH SOUTH DETOUR
PROJECT KICKOFF MEETING AGENDA
Tuesday March 16, 2004

10:00 a.m.	Meeting Begin

Location:

Imbsen & Assoc. Inc.
9912 Business Park Drive Suite 130
Sacramento CA 95827

Agenda:

- Introductions
- Proposed meeting schedule
- Conformed set of Plans and Special Provisions
  - Electronic set of plans
  - How we are going to incorporate contract plans with new plans
- Establish procedures for asking Technical Questions
- QC/QA Plan Submittal
  - Submittal Tracking
  - Remove reference to Caltrans as the client or co-client
- Deviations from Caltrans Criteria
- Preliminary Design Submittal for the East Tie-In
  - Preliminary submittal: By segment vs. by element
  - Technical Specifications
  - Design Drawing Comments
- Preliminary Design Submittal for the West Tie-In
  - Preliminary submittal: By segment vs. by element
  - Technical Specifications
  - Design Drawing Comments
  - Structure Support Location A, C and D

SOUTH/SOUTH DETOUR PROJECT 1295

DESIGN MEETING MINUTES

Location:	Imbsen & Assoc. Inc. 9912 Business Park Drive Suite 130 Sacramento, CA 95827	Date: Time:	April 27, 2004 9:00 a.m.- 12:00 p.m.

Minutes Prepared By: Lance A. Schrey of Imbsen & Associates, Inc.

Attendees List: See Attachment 1

Purpose

The purpose was to have all parties working on the project to meet, continue to set up a system to communicate with each other and begin asking technical questions.

It is not the intent of these meeting minutes to change the contract in any way.

Attachments

Attachment 1 – Attendees
Attachment 2 – Agenda (prepared by IAI)
Attachment 3 – Viaduct Stiffness Comparison (file copy only)

Distribution List

Dan Adams	Caltrans (to distribute to Caltrans)
J. Ronning	DCCI (to distribute to DCCI)
B. Coupe	CC Myers
IAI Attendees	
IAI File 1295.310.01	

Meeting Notes

The following is a summary of pertinent issues, which were addressed at the meeting:

1. Ken had not looked at John's E-mail regarding Confidentiality Agreement. He said he would look at and E-mail during our meeting.

2. Lance asked about comments from Caltrans regarding draft meeting minutes for 4/2/2004, 4/9/2004 and 4/16/2004. Dan said the only comment they had was item #16 from the minutes of 4/16/2004. Bill said CC Myers was concerned that RFI's #5 and #7 keep being discussed with no resolution. Lance said IAI has not received response to these RFI's. Tom said it would be easier if they had a submittal. Tom also said he would like to see a criteria for the East Tie-In.

3. It was agreed to have a joint at E-1 to handle 2" of displacement.

4. Roy handed out Viaduct Stiffness Comparison (attached).

5. Tom is concerned with the flexibility of the structure.

6. Caltrans will want to see displacement results for load groups 1-7.

7. Roy said he is looking at DIS bearing with lead core.

8. Tom said he received results from the wind study, which he is looking at and will get back to IAI on it.

9. Lance asked about a site specific rainfall intensity. He asked about the deck drainage criteria since the shoulders are very small. Dan said he would look into this issue.

10. Regarding RFI #8, Tom said he is putting together a package, which he hopes to get to IAI on Friday the 30th.

11. Roy and Tom are in general agreement that E-1 will not come down in a DLS event due to a combination of energy dissipation resulting from splice failure and rocking.

12. Discussion regarding RFI #9 (connection of East Tie-In to Pier E-1):

    a. Roy proposed a smaller safety factor.

b. Randy said that the force that Pier E-1 sees should be minimized.
c. Ali would like the bracket connecting to Pier E-1 to be able to handle the forces associated with 3 x DEE for the connection of the bracket or bolster.
d. Ali asked if Bent 53 could handle all of the mass of span 53. Majid said he was not comfortable with that idea.

13. Regarding RFI #10: Caltrans would like the superstructure of the East Tie-In to remain elastic at DLS.

14. Regarding RFI #11: Caltrans said the C-Bent should be considered part of the superstructure. Caltrans said they envisioned the roll in/roll out to be elastic.

15. Lance asked for maintenance reports regarding the existing structure in span YB-4.

16. Lance inquired whether Caltrans Structures Maintenance would want inspection walkways. Caltrans will look into this issue.

17. John asked for the power-point presentation, which IAI had previously completed, to give to his scheduler.

18. Regarding RFI #12: Dan said he talked with Lian Duan and A490 bolts are OK. Lian cautioned that in accordance with BDS 10.24.1.1, A490 bolts can not be galvanized.

19. By the end of the meeting Ken had forwarded Johns E-mail. It was decided that IAI would fill out a new Confidentiality Agreement adding verbiage from the E-mail and exchange it for As-builts on 4/28/2004.

Attachment 1

MEETING ATTENDANCE SHEET

San Francisco – Oakland Bay Bridge
Temporary Bypass Structure

IAI Job # 1295 Contract # 04-0120R4

Date: 4-27-2004

Caltrans:

☐	Pete Siegenthaller	☒	Tom Ostrom	☐	Manode Kodsuntie
☐	Amer Bata	☒	Dan Adams	☐	Trinh Lia
☐	Ken Loncharich	☒	Ali Asnaashari	☐	Nizar Melehani
☒	John Walters	☒	Randy Bains	☐	Eric Watson

CC Myers:

- ☐ Bob Coupe
- ☒ Bill Kidwell

DCCI:

- ☐ Jim Ronning
- ☐ Jack Geer
- ☐ Ron Paz

Imbsen & Associates:

☒	Roy Imbsen	☐	Jonathan Reina
☒	Lance Schrey	☐	Ghassam Dini
☐	Dick LeBeau	☐	Sasan Soltani
☐	Ed Tyk	☒	Majid Saraf
☐	Todd Lambert	☐	

Others:

☐	☐

Note: The boxes checked above designate attendance at the meeting.

Attachment 1

BAY BRIDGE TEMPORARY BYPASS

SOUTH SOUTH DETOUR
PROJECT MEETING AGENDA
Tuesday April 27, 2004

9:00 a.m. Meeting Begin

Location:

Imbsen & Assoc. Inc.
9912 Business Park Drive Suite 130
Sacramento CA 95827

Agenda:

- Past meeting minutes
  - Meeting 4/02/04
  - Meeting 4/09/04
  - Meeting 4/16/04

- As-built plans
  - List of files on CD
  - Confidentiality Agreement

- Request for Information Log
  - RFI # 5, 7, 8, 9, 10, 11, & 12

- Viaduct
  - Superstructure participation in stiffness calculations for each bent

- East Tie-In

SOUTH/SOUTH DETOUR PROJECT 1295

DESIGN MEETING MINUTES

Location:	Imbsen & Assoc. Inc. 9912 Business Park Drive Suite 130 Sacramento, CA 95827	Date: Time:	April 30, 2004 9:00 a.m.- 12:00 p.m.

Minutes Prepared By: Lance A. Schrey of Imbsen & Associates, Inc.

Attendees List: See Attachment 1

Purpose

The purpose was to have all parties working on the project to meet, continue to set up a system to communicate with each other and begin asking technical questions.

It is not the intent of these meeting minutes to change the contract in any way.

Attachments

Attachment 1 – Attendees
Attachment 2 – Agenda (prepared by IAI)
Attachment 3 – Preliminary Draft Criteria for the East Tie-In (file copy only)

Distribution List

Dan Adams	Caltrans (to distribute to Caltrans)
J. Ronning	DCCI (to distribute to DCCI)
B. Coupe	CC Myers
IAI Attendees	
IAI File 1295.310.01	

Meeting Notes

The following is a summary of pertinent issues, which were addressed at the meeting:

1. Tom provided Wind Study Report, dated January 2002.

2. Ken (by phone) said he would be able to send out electronic version of the contract Special Provisions.

3. RFI #8: Tom still working on it.

4. RFI #12: Ken said the contract calls for A325 Bolts. He would like to see a change request from CC Myers. Caltrans said A490 Bolts can not be hot dipped galvanized.

5. IAI asked Caltrans what they were looking for in the way of a load path diagram for the preliminary submittal.
    a. Caltrans would like to see truck location transversely.
    b. For the preliminary submittal only controlling load case is needed.
    c. Roy presented truss diagram with loads shown. This was acceptable to Caltrans. It was agreed the information for the laterals, chords and the columns.
    d. For the East Tie-In it was agreed to the requested information for the box beams, Bent 53 and for the connections to the Viaduct and Pier E-1.

6. Tom did not have a problem with what is shown on the Viaduct for deck drainage.

7. Bill asked if he could use Engineering Basis as a reason to use A490 Bolts? Tom said that is a contractual issue to be discussed with Ken.

8. Todd came in and discussed the West Tie-In:
    a. Todd asked where the timber blocking goes. Tom was not clear if the timber blocking goes in both directions. Tom said he would investigate and to make it an agenda item for Tuesdays meeting.
    b. Todd inquired about the existing post-tensioning.
        i. Roy said he talked with Dave Swanson, who worked on the existing. He said they did have problems grouting and suggested detensioning to see if the strands were bonded.

ii. Tom stated that if the SEG is built as per the Contract Plans that Caltrans is comfortable with the existing post-tensioning. It is important that the anchorages are not damaged during concrete removal of the SEG.

c. Todd inquired about the criteria for Pier Walls.
   i. Todd said he can not meet the SDC criteria for Pier Walls for a portion of Support Structure Location "A".
   ii. Tom said that the West Tie-In was definitely a widening not new construction and was not sure the SDC should control. He felt IAI should look more at the capacity verses the demand. Tom wanted this issue placed on the Agenda for Tuesdays meeting.

9. Roy handed out a preliminary draft criteria for the East Tie-IN (attached). Caltrans will review and discuss at the next meeting.

Attachment 1

MEETING ATTENDANCE SHEET

San Francisco – Oakland Bay Bridge

Temporary Bypass Structure

IAI Job # 1295 Contract # 04-0120R4

Date: 4-30-2004

Caltrans:

☐	Pete Siegenthaller	☒	Tom Ostrom	☐	Manode Kodsuntie
☐	Amer Bata	☒	Dan Adams	☐	Trinh Lia
☐	Ken Loncharich	☐	Ali Asnaashari	☐	Nizar Melehani
☐	John Walters	☐	Randy Bains	☐	Eric Watson

CC Myers:

- ☐ Bob Coupe
- ☒ Bill Kidwell

DCCI:

- ☐ Jim Ronning
- ☐ Jack Geer
- ☐ Ron Paz

Imbsen & Associates:

☒	Roy Imbsen	☐	Jonathan Reina
☒	Lance Schrey	☐	Ghassam Dini
☐	Dick LeBeau	☐	Sasan Soltani
☐	Ed Tyk	☐	Majid Saraf
☒	Todd Lambert	☐	

Others:

☐ ☐

Note: The boxes checked above designate attendance at the meeting.

Attachment 2

BAY BRIDGE TEMPORARY BYPASS

SOUTH SOUTH DETOUR
PROJECT MEETING AGENDA
Friday April 30, 2004

9:00 a.m.	Meeting Begin

Location:

Imbsen & Assoc. Inc.
9912 Business Park Drive Suite 130
Sacramento CA 95827

Agenda:

- Past meeting minutes
- Electronic Version of Standard Specifications
- Request for Information Log
  - Outstanding RFI's
- Free Body Diagrams for Preliminary Submittals
- East Tie-In Criteria
- Miscellaneous Questions

SOUTH/SOUTH DETOUR PROJECT 1295

DESIGN MEETING MINUTES

Location:	Imbsen & Assoc. Inc. 9912 Business Park Drive Suite 130 Sacramento, CA 95827	Date: Time:	May 4, 2004 10:00 a.m.- 12:00 p.m.

Minutes Prepared By: Lance A. Schrey of Imbsen & Associates, Inc.

Attendees List: See Attachment 1

Purpose

The purpose was to have all parties working on the project to meet, continue to set up a system to communicate with each other and begin asking technical questions.

It is not the intent of these meeting minutes to change the contract in any way.

Attachments

Attachment 1 – Attendees
Attachment 2 – Agenda (prepared by IAI)
Attachment 3 – Preliminary Ductility results – West Tie-In
Attachment 4 – Preliminary Draft Criteria for the East Tie-In (file copy only)

Distribution List

Dan Adams	Caltrans (to distribute to Caltrans)
J. Ronning	DCCI (to distribute to DCCI)
B. Coupe	CC Myers
IAI Attendees	
IAI File 1295.310.01	

Meeting Notes

The following is a summary of pertinent issues, which were addressed at the meeting:

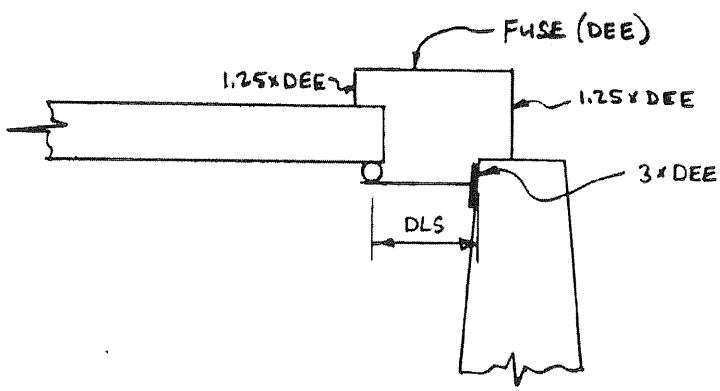
1. Dan provided "Drainage Report for Construction of State Highway" prepared by Manna Consultants dated January 2002. Lance inquired about having drainage extend past the edge of shoulder (small shoulders). Dan said we would need to discuss with the District. John said the drainage would have to be pipe off of the structure and below ground. Dan said the original contract allowed scuppers, but this option was removed in one of the addendums.

2. RFI #8: Tom still working on getting IAI information on the South Edge Girder.

3. A discussion of the past meeting minutes ensued. Dan would like item #16 from the draft minutes of 4/16/2004 to be removed. He feels if an item is that important to IAI and CC Myers then it should be placed on the Agenda. Bill suggested leaving it in the minutes and stating Caltrans objection. CC Myers and IAI will look into the item and get back to Caltrans.

4. Regarding RFI #12 CC Myers will request a CCO to use A490 bolts.

5. The Preliminary Draft Criteria for the East Tie-In (attached), which was handed out in the meeting dated 4/30/2004 was discussed.
   a. Item #1: Randy would like it to say "For joint performance..." Roy concurred.
   b. Item #3: Caltrans would like it to be modified to read "A load limiting devise attached to Pier E-1 shall fuse at DEE.
   c. Item #4: Roy drew the connections to Pier E-1 on the board and discussed the drawing. Caltrans concurred with the drawing. Below is a sketch of the aforementioned drawing:



d. Item #5: Dan asked what would happen when the displacement was greater than 6".
e. Item #6: Randy doesn't want the floor beams to be damaged. Roy said he doesn't want to design the existing to 3 x DEE elastically. Dan asked what IAI would do if the existing floor beams could not take the loads from DEE. Roy said they would have to be retrofitted.
f. Item #8: Caltrans would like connections to be added. Ali said that this did not comply with the criteria. Roy said the idea is to fuse and that it is OK for the final condition. Ali is concerned with the existing floor beams being designed to DEE while the new is designed to DLS. Roy will have Majid look at 3 x DEE and DLS for the floor beams. Randy would like to see wind displacements at the joints for the East Tie-In.

6. Todd and Jonathan came in and discussed the West Tie-In:
   a. Timber Blocking:
      i. Manode said the Timber Blocking is between the floor beams and the shear keys and no elastomeric pads in the longitudinal direction. Caltrans wants to see blocking between all floor beams along SSL "A" & SSL "D". A discussion ensued regarding Contract Sheet 118 and how the CC Myers team interpreted the access restrictions near the existing columns were to be left clear for future construction. Therefore blocking within those floor beams was not included in the proposal submittal. By doing this IAI pointed out that Design Criteria 8.4 has already been satisfied.
      ii. Todd will look into blocking at SSL "A" & "D".
      iii. Manode said there is to be a minimum of a 2" gap at the bottom of the center girder and the top of SSL "D".
      iv. This same 2" vertical gap at SSL "A" is to be filled with elastomeric pads.
      v. Roy asked about getting calculations from Caltrans for the blocking.
   b. Pier Walls at SSL "A": Jonathan showed sheet with preliminary ductility results (attached). Todd asked about providing reinforcing ties to provide ductility. Roy suggested looking at pier wall testing. Dan would like to take back ductility results to review. Todd said he would clean it up and E-mail it to Dan.

Attachment 1

MEETING ATTENDANCE SHEET

San Francisco – Oakland Bay Bridge

Temporary Bypass Structure

IAI Job # 1295 Contract # 04-0120R4

Date: 5-04-2004

Caltrans:

☐	Pete Siegenthaller	☐	Tom Ostrom	☒	Manode Kodsuntie
☐	Amer Bata	☒	Dan Adams	☐	Trinh Lia
☐	Ken Loncharich	☒	Ali Asnaashari	☐	Nizar Melehani
☒	John Walters	☒	Randy Bains	☐	Eric Watson

CC Myers:

- ☐ Bob Coupe
- ☒ Bill Kidwell

DCCI:

- ☐ Jim Ronning
- ☐ Jack Geer
- ☐ Ron Paz

Imbsen & Associates:

☒	Roy Imbsen	☒	Jonathan Reina
☒	Lance Schrey	☐	Ghassam Dini
☐	Dick LeBeau	☐	Sasan Soltani
☐	Ed Tyk	☐	Majid Saraf
☒	Todd Lambert	☐	

Others:

☐ ☐

Note: The boxes checked above designate attendance at the meeting.

Attachment 2

BAY BRIDGE TEMPORARY BYPASS

SOUTH SOUTH DETOUR
PROJECT MEETING AGENDA
Tuesday May 4, 2004

10:00 a.m.	Meeting Begin

Location:

Imbsen & Assoc. Inc.
9912 Business Park Drive Suite 130
Sacramento CA 95827

Agenda:

- Past meeting minutes
- Request for Information Log
  - Outstanding RFI's
- West Tie-In questions
  - Timber blocking
  - Post Tension in existing
  - Pier Walls – SSL-A
- East Tie-In Draft Criteria

Attachment 3

Bay Bridge West Tie In

SSL A Design

PRELIMINARY

SSL A

ID	SSLA1	SSLA2	SSLA3	SSLA4	SSLA5	SSLA6	SSLA7	SSLA8	
No of FB	1	1	1	3	3	3	3	3	
V	565	546	589	885	688	709	499	659	
dFTG	7.56	7.56	7.56	6.56	6.56	6.56	6.56	6.56	
w	11.2	11.2	11.2	27	27	27	27	27	
Kftg	307.8982	307.8982	307.8982	644.0727	644.0727	644.0727	644.0727	644.0727	
Pftg	582	582	582	1056	1056	1056	1056	1056	
d/c	0.97	0.94	1.01	0.84	0.65	0.67	0.47	0.62	<1
Trans	1.84	1.77	1.91	1.37	1.07	1.10	0.77	1.02	
L	22	22	22	22	22	22	22	22	
ϕy	4.92E-04	4.92E-04	4.92E-04	4.78E-04	4.78E-04	4.78E-04	4.78E-04	4.78E-04	
ϕu	1.43E-02	1.43E-02	1.43E-02	1.43E-02	1.43E-02	1.43E-02	1.43E-02	1.43E-02	
db	1.41	1.41	1.41	2	2	2	2	2	
Lp	35.50	35.50	35.50	41.52	41.52	41.52	41.52	41.52	>28.8, 40.8
Δy	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	
ϕp	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	
θp	0.041	0.041	0.041	0.048	0.048	0.048	0.048	0.048	
Δp	10.06	10.06	10.06	11.59	11.59	11.59	11.59	11.59	
Δc	11.01	11.01	11.01	12.52	12.52	12.52	12.52	12.52	
μc	11.6	11.6	11.6	13.5	13.5	13.5	13.5	13.5	>3
μd	1.93	1.86	2.01	1.48	1.15	1.19	0.84	1.11	<5
DLS	0.50	0.48	0.52	0.33	0.26	0.26	0.19	0.25	<1

ID	SSLA1	SSLA2	SSLA3	SSLA4	SSLA5	SSLA6	SSLA7	SSLA8	
No of FB	1	1	1	3	3	3	3	3	
V	319	246	265	111	97	78	84	75	
dFTG	7.56	7.56	7.56	3.28	3.28	3.28	3.28	3.28	
w	16	16	16	16	16	16	16	16	
Kftg	439.8545	439.8545	439.8545	190.8364	190.8364	190.8364	190.8364	190.8364	
Pftg	831	831	831	156	156	156	156	156	
d/c	0.38	0.30	0.32	0.71	0.62	0.50	0.54	0.48	
Long	0.73	0.56	0.60	0.58	0.51	0.41	0.44	0.39	
L	22	22	22	22	22	22	22	22	
ϕy	1.82E-04	1.82E-04	1.82E-04	4.79E-04	4.79E-04	4.79E-04	4.79E-04	4.79E-04	
ϕu	3.39E-03	3.39E-03	3.39E-03	1.03E-02	1.03E-02	1.03E-02	1.03E-02	1.03E-02	
db	1.41	1.41	1.41	2	2	2	2	2	
Lp	35.50	35.50	35.50	41.52	41.52	41.52	41.52	41.52	
Δy	0.35	0.35	0.35	0.93	0.93	0.93	0.93	0.93	
ϕp	0.003	0.003	0.003	0.010	0.010	0.010	0.010	0.010	
θp	0.009	0.009	0.009	0.034	0.034	0.034	0.034	0.034	
Δp	2.33	2.33	2.33	8.23	8.23	8.23	8.23	8.23	
Δc	2.69	2.69	2.69	9.16	9.16	9.16	9.16	9.16	
μc	7.6	7.6	7.6	9.9	9.9	9.9	9.9	9.9	>3
μd	2.06	1.59	1.71	0.63	0.55	0.44	0.47	0.42	<1
DLS	0.81	0.62	0.67	0.19	0.17	0.13	0.14	0.13	<1

SOUTH/SOUTH DETOUR PROJECT 1295

DESIGN MEETING MINUTES

Location: Imbsen & Assoc. Inc.
9912 Business Park Drive
Suite 130
Sacramento, CA 95827

Date: May 7, 2004

Time: 10:00 a.m.- 12:00 p.m.

Minutes Prepared By: Lance A. Schrey of Imbsen & Associates, Inc.

Attendees List: See Attachment 1

Purpose

The purpose was to have all parties working on the project to meet, continue to set up a system to communicate with each other and begin asking technical questions.

It is not the intent of these meeting minutes to change the contract in any way.

Attachments

Attachment 1 – Attendees
Attachment 2 – Agenda (prepared by IAI)
Attachment 3 – Handout for Viaduct Displacements due to Wind and DEE

Distribution List

Dan Adams	Caltrans (to distribute to Caltrans)
J. Ronning	DCCI (to distribute to DCCI)
B. Coupe	CC Myers
IAI Attendees	
IAI File 1295.310.01	

Meeting Notes

The following is a summary of pertinent issues, which were addressed at the meeting:

1. IAI handed out RFI #13 w/ handouts. Trinh said he would review and get back to IAI as soon as he could.

2. IAI requested electronic version of the Road Plans. Trihn did not think it would be a problem to get them.

3. There is a meeting in Oakland at 10:00 a.m. on May 11th to discuss the scheduled deck survey of the existing deck on the 15th and 16th.

4. There is no word yet on if Caltrans Structures Maintenance would like inspection platforms for the East Tie-In.

5. Lance asked about the use of scuppers and having the deck drainage extend into the traveled way due to the small shoulders. Trinh said that scuppers would not be allowed and he would look into allowing some of the drainage extend into the traveled way.

6. Roy handed out a graph of the transverse displacements for each bent for the Viaduct and East Tie-In for both the wind and DEE load cases.
   a. Randy is concerned that the existing Floor Beams will see loads higher than DEE.
   b. Tom quoted 4.3.5 of the Design Criteria.
   c. Majid asked what Caltrans envisioned with the Roll-Out/Roll-In. Tom said no fusing was envisioned. Tom also said they wanted it to remain elastic for DEE and stable for DLS.

7. RFI #11: Majid questioned response to RFI. Dan said Caltrans never wanted to get into an analysis of Pier E-1. Tom said he wants to see a new submittal of the East Tie-In before changes are made to the criteria.

8. Roy said IAI is looking at the bearings and continuing with the criteria for the East Tie-In.

9. Trinh commented that several of the foundations are outside the limits shown on the plans.
   a. Caltrans said Bent 52 Left extends to far north. Dan said it is 260 mm, Trinh said about 90 mm. Tom said that the new structure foundation (for the final structure) is in the same location and may require modification on IAI's part. Dan said IAI's foot-

ing also conflicts with the existing footing of Bent YB-4. IAI said they would investigate.

b. Trinh said Bent 49 Right extends past the limits shown on the plans. Lance commented that limit line was not called out on the plans so it could be layed out and that several inquiry's were made, but no answers were given. Tom said they were not sure the reason for the limit in that location that there did not seem to be a conflict with anything and they would look into it.
c. Trinh said it appeared that the right columns of Bent 50 and 51 were also in conflict. IAI will investigate.
d. Trinh also commented that it appeared that Torpedo Factory Road was being infringed upon. Lance said he believed that the specifications say that there only needs to be access.

10. Randy and Ali inquired about the fuse and how to make sure the fuses at the right load.
11. It was decided not to have a meeting next Tuesday.

Attachment 3

MEETING ATTENDANCE SHEET

San Francisco – Oakland Bay Bridge
Temporary Bypass Structure

IAI Job # 1295 **Contract # 04-0120R4**

Date: 5-07-2004

Caltrans:

☐	Pete Siegenthaller	☒	Tom Ostrom	☒	Manode Kodsuntie
☐	Amer Bata	☒	Dan Adams	☒	Trinh Lia
☐	Ken Loncharich	☒	Ali Asnaashari	☐	Nizar Melehani
☐	John Walters	☒	Randy Bains	☐	Eric Watson

CC Myers:

- ☐ Bob Coupe
- ☒ Bill Kidwell

DCCI:

- ☐ Jim Ronning
- ☐ Jack Geer
- ☐ Ron Paz

Imbsen & Associates:

☒	Roy Imbsen	☐	Jonathan Reina
☒	Lance Schrey	☐	Ghassam Dini
☐	Dick LeBeau	☐	Sasan Soltani
☐	Ed Tyk	☐	Majid Saraf
☐	Todd Lambert	☐	

Others:

☐	☐

Note: The boxes checked above designate attendance at the meeting.

Attachment 3

BAY BRIDGE TEMPORARY BYPASS

SOUTH SOUTH DETOUR
PROJECT MEETING AGENDA
Friday May 7, 2004

10:00 a.m.	Meeting Begin

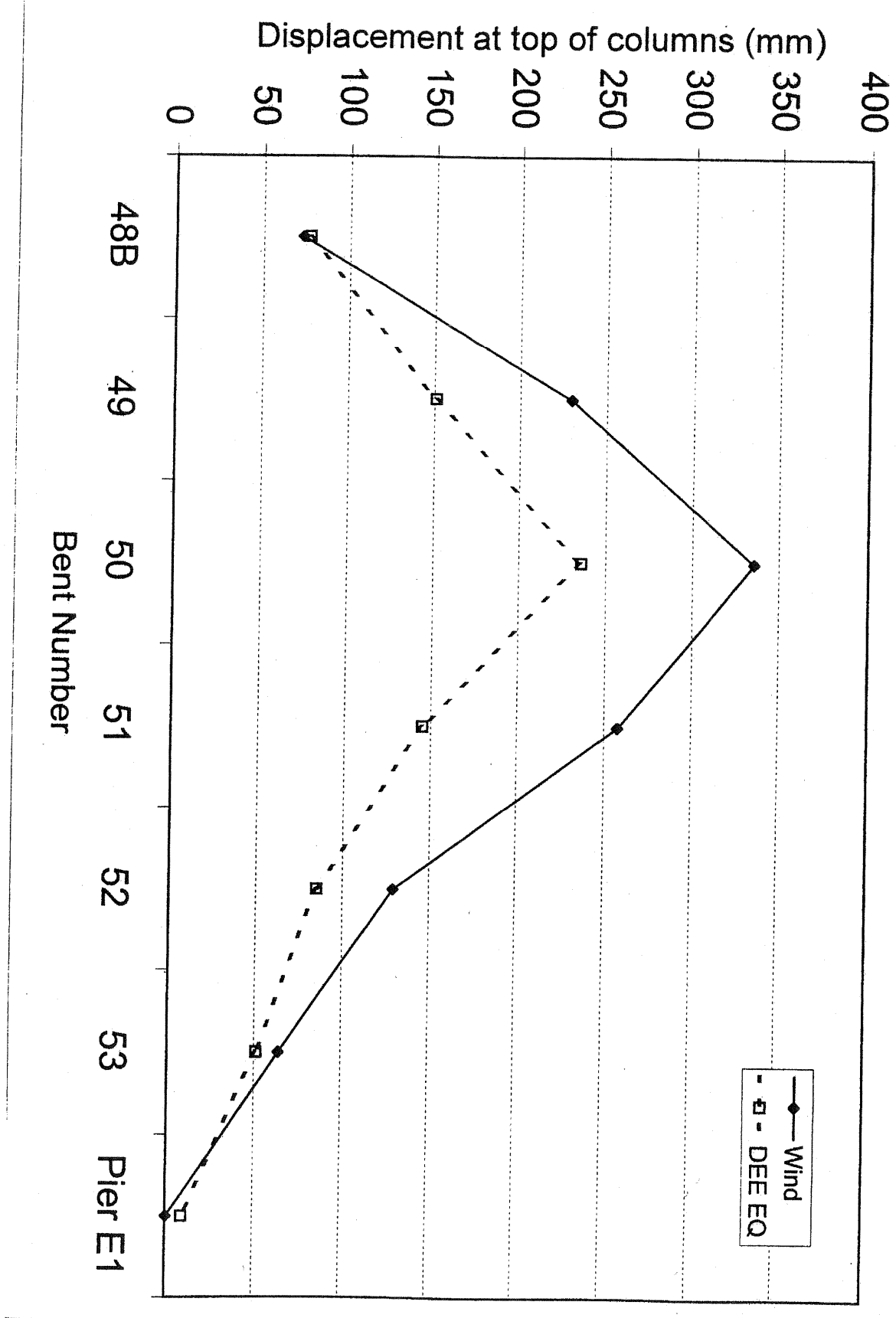
Location:

Imbsen & Assoc. Inc.
9912 Business Park Drive Suite 130
Sacramento CA 95827

Agenda:

- Past meeting minutes
- Request for Information Log
  - Outstanding RFI's
  - New RFI's
- West Tie-In
  - SSL "A" Ductility Requirements
- East Tie-In Draft Criteria
  - Displacement Handout

Attachment 3



SOUTH/SOUTH DETOUR PROJECT 1295

DESIGN MEETING MINUTES

Location: Imbsen & Assoc. Inc.
9912 Business Park Drive
Suite 130
Sacramento, CA 95827

Date: May 21, 2004

Time: 10:00 a.m.- 12:00 p.m.

Minutes Prepared By: Lance A. Schrey of Imbsen & Associates, Inc.

Attendees List: See Attachment 1

Purpose

The purpose was to have all parties working on the project to meet to answer technical questions associated with the design.

It is not the intent of these meeting minutes to change the contract in any way.

Attachments

Attachment 1 – Attendees
Attachment 2 – Agenda (prepared by IAI)

Distribution List

Dan Adams	Caltrans (to distribute to Caltrans)
J. Ronning	DCCI (to distribute to DCCI)
B. Coupe	CC Myers
IAI Attendees	
IAI File 1295.310.01	

Meeting Notes

The following is a summary of pertinent issues, which were addressed at the meeting:

1. Bill gave Lance a copy of the deck survey. Lance made copies for Dan and Trinh.

2. Roy suggested only meeting once a week. It was decided to meet on Wednesday's at 10:00 on an as needed basis.

3. Dan was given his portion of the Preliminary Viaduct Submittal, submitted to Office of Structures Construction on 5/20/2004.

4. George presented the revised profile.
   a. George said only the WD1 line was changed.
   b. Trinh asked if the vertical clearance was checked. George said he had and it was OK.
   c. George said that there was no change to the West Tie-In and only about 30% of the Viaduct was effected.
   d. Lance noted that IAI still does not have an electronic version of the Contract Road Plans.
   e. Trinh would like a revised RFI regarding the new proposed profile.

5. John feels that any changes to the Design Criteria will require a Contract Change Order and he stated that he is preparing a list of all changes to date. A discussion ensued regarding Bent 48B. Roy stated that IAI was meeting the criteria, however the displacements were greater than both he and Caltrans were comfortable with for the wind loading. Additionally, the structure would not come back to it's original location.

6. Bill received a fax earlier in the day with the South Edge Girder Calculations. He gave a copy to IAI.

7. Roy requested the probabilistic information for the ARS curve shown in the Contract Plans. Tom commented that he was also interested in getting a copy and that he would work on getting IAI a copy.

8. Majid came into the meeting to discuss the East Tie-In:
   a. Majid said that the longitudinal force for 3 x DEE he is getting on the South E-1 Pier is 5355 kips and 3800 on the North E-1 Pier. He is assuming that as long as the existing pier can take the local forces that Pier E-1 has adequate capacity. Caltrans concurred with this assumption.

b. Majid asked about removing a portion of the existing web wall connecting the north and south E-1 Piers. Caltrans wanted to see numbers and plans to evaluate the effects on Pier E-1.
c. Majid's analysis shows that the existing floor beams and chords are currently overstressed.

9. Tom will check with Structures Maintenance to see about IAI getting pertinent maintenance records for the East Tie-In.

Attachment 1

MEETING ATTENDANCE SHEET

San Francisco – Oakland Bay Bridge
Temporary Bypass Structure

IAI Job # 1295 Contract # 04-0120R4

Date: 5-21-2004

Caltrans:

☐	Pete Siegenthaller	☒	Tom Ostrom	☐	Manode Kodsuntie
☐	Amer Bata	☒	Dan Adams	☐	Trinh Lia
☐	Ken Loncharich	☐	Ali Asnaashari	☐	Nizar Melehani
☒	John Walters	☐	Randy Bains	☐	Eric Watson

CC Myers:

- ☐ Bob Coupe
- ☒ Bill Kidwell

DCCI:

- ☐ Jim Ronning
- ☐ Jack Geer
- ☐ Ron Paz

Imbsen & Associates:

☒	Roy Imbsen	☐	Jonathan Reina
☒	Lance Schrey	☐	Ghassam Dini
☐	Dick LeBeau	☐	Sasan Soltani
☐	Ed Tyk	☒	Majid Saraf
☐	Todd Lambert	☒	George Imbsen

Others:

☐ ☐

Note: The boxes checked above designate attendance at the meeting.

Attachment 2

BAY BRIDGE TEMPORARY BYPASS

SOUTH SOUTH DETOUR
PROJECT MEETING AGENDA
Friday May 21, 2004

10:00 a.m.	Meeting Begin

Location:

Imbsen & Assoc. Inc.
9912 Business Park Drive Suite 130
Sacramento CA 95827

Agenda:

- Past meeting minutes

- Request for Information Log
    - South Edge Girder Calculations

- Existing Truss being overstressed (East Tie-In)

- Viaduct and East Tie-In profile

Attachment 1

MEETING ATTENDANCE SHEET

San Francisco – Oakland Bay Bridge
Temporary Bypass Structure

IAI Job # 1295 **Contract # 04-0120R4**

Date: 5-21-2004

Caltrans:

☐	Pete Siegenthaller	☒	Tom Ostrom	☒	Manode Kodsuntie
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CC Myers:

- ☒ Bob Coupe
- ☒ Bill Kidwell

DCCI:

- ☐ Jim Ronning
- ☐ Jack Geer
- ☐ Ron Paz

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☒	Roy Imbsen	☐	Jonathan Reina
☐	Lance Schrey	☐	Ghassam Dini
☐	Dick LeBeau	☐	Sasan Soltani
☐	Ed Tyk	☒	Majid Saraf
☒	Todd Lambert	☐	George Imbsen

Others:

☐ ☐

Note: The boxes checked above designate attendance at the meeting.

SOUTH/SOUTH DETOUR PROJECT 1295

DESIGN MEETING MINUTES

Location: Imbsen & Assoc. Inc.
9912 Business Park Drive
Suite 130
Sacramento, CA 95827

Date: June 9, 2004

Time: 10:00 a.m.- 12:15 p.m.

Minutes Prepared By: Todd Lambert of Imbsen & Associates, Inc.

Attendees List: See Attachment 1

Purpose

The purpose was to have all parties working on the project to meet to answer technical questions associated with the design.

It is not the intent of these meeting minutes to change the contract in any way.

Attachments

Attachment 1 – Attendees
Attachment 2 – Agenda (prepared by IAI)

Distribution List

Dan Adams	Caltrans (to distribute to Caltrans)
J. Ronning	DCCI (to distribute to DCCI)
B. Coupe	CC Myers
IAI Attendees	
IAI File 1295.310.01	

Meeting Notes

The following is a summary of pertinent issues, which were addressed at the meeting:

1. IAI received minor comments from Dan today on all three meeting minutes.

2. Dan sent response to RFI #00014 that there about eight binders of calculations available for our review and to copy if needed. John Mook, contract manager for PBQ&D, has these binders and we should schedule our visit through Dan.

3. RFI #00015 rev 1 is in the hands of District 4 to provide response.

4. Support Structure Location C – Todd discussed two possible options for the design of the temporary portion of this support location. One, that CC Myers is investigating, would be a modular frame capable of transmitting the longitudinal force imposed by the DEE to the foundation. The other option would be to resist all of the longitudinal force in the concrete walls placed beyond Bent 45. However, the shear demand would be 280 kip at each floor beam. Capacity of the floor beams needs to be checked to resist this load. Tom said that the PBQ&D design used concentrically braced frames with bars for bracing along the length of the support, but in the end found it not feasible.

5. Support Structure Location D – Todd explained the background to RFI #00016 and that the longitudinal force was based on the DEE and the question is how to place a structural system including a foundation in the short period the bridge is closed to traffic. Tom said the criteria isn't clear on what longitudinal load is to be applied for this temporary condition. He said their response to this RFI would be for us to look to calculate the longitudinal braking force and compare it to a reduced seismic force where a lower percent of the static force would be applied.

6. Majid came into the meeting to discuss the East Tie-In:
    a. Tom said they are satisfied with the amount of data with tabulation of load results given to them on Monday afternoon, but would like to know the controlling load case for each stage. Tom also asked that the submittal include information about how sensitive the design is to the variable live load and how does the cutting of the members affect the load distribution.
    b. Majid said that the jacking would be performed simultaneously at each panel point to support the predetermined dead load reaction. At which time the strain gages would be zeroed out to then measure the effects of any live load.

c. Ali asked if the jacking operation is based on measuring displacement or force. Majid said it would be based on predetermined static reactions at each panel point.
d. It was decided to go through the staging operation based on the handout given to Caltrans on Monday afternoon.

7. Stage 1 – Shows the existing condition with all loads tabulated, but does not include seismic loads.

8. Stage 2 – Shows simultaneous jacking at all panel points to unload the south truss due to dead load. Displacement transducers are placed at every jacking point. Tom suggested measuring the grades from a fixed point like Pier E1. Ali said they want to see the sensitivity to the amount of live load. Majid said that the live load induced forces will be measured through strain gage readings and the jacking loads applied will include 50% ± of the maximum readings. In addition, the operation will be performed during very low traffic volumes and include closure of the lane nearest the jacking points.

9. Stage 3 – The south truss has now been removed, but the north truss is still in place.

a. Ali questioned why this stage doesn't include some seismic loading, as it will be in place for some period of time. Based on a reduced probability, some demand below DEE could be used. This would be compared to full wind load to see which controlled.
b. Majid said that a significantly reduced seismic hazard could be applied through construction. Furthermore, the South ETI structure does provide significant lateral resistance to the DLS earthquake and it will be in place before the South truss members are removed. Thus, seismic loading during these temporary stages should not control the design.
c. Tom said section 2.6.1 and 2.6.2 of the criteria refers to Caltrans BDS and an ASCE document for loading on temporary structures.
d. Tom said they would like to see preliminary design criteria as a road map to how the east tie-in is designed and constructed.
e. Roy said they are updating the animation file (PowerPoint) to match the latest staging submittal.
f. Because of time limitations, it was decided this discussion should continue at the next meeting.

10. Bent 53 Pushover Analysis – Majid said there are fixed bearings at the top of the columns. Ali questioned how the superstructure could be capacity protected when the column analysis shows it to remain elastically for both the DEE and DLS and beyond the DLS. Tom read section 4.3.4 of the criteria regarding ductile structures. Numerous dis-

cussions took place regarding weakening the columns and using load limiting bearings to limit the force the superstructure would see. Roy said it sounds like Caltrans is asking the design to include the possibility of a higher level earthquake then the DLS. Majid said this capacity protected requirement is not being met now at Pier E1 where the criteria calls for the anchorage to E1 and E1 is assumed to be a non-ductile element. Majid questioned the inconsistency in seismic design assumptions as it relates to different parts of the ETI superstructure. It was decided that this too would be continued to the next meeting.

11. Regarding the submittal review priority, it was said that a separate discussion had been held between Ken and Bob.

12. Ali said they also had concern with Stage 9 and to discuss it at the next meeting.

13. Roy said that they now have the loads tabulated for all the stages. At the meeting on Monday, Roy gave out hard copies of the tabulated loads for only Stage 1 and the last stage. Caltrans asked that we email the electronic file of all the tabulated loads (for all stages) to Dan for their review.